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REPORT OF:

The Secretary of Agriculture

1957

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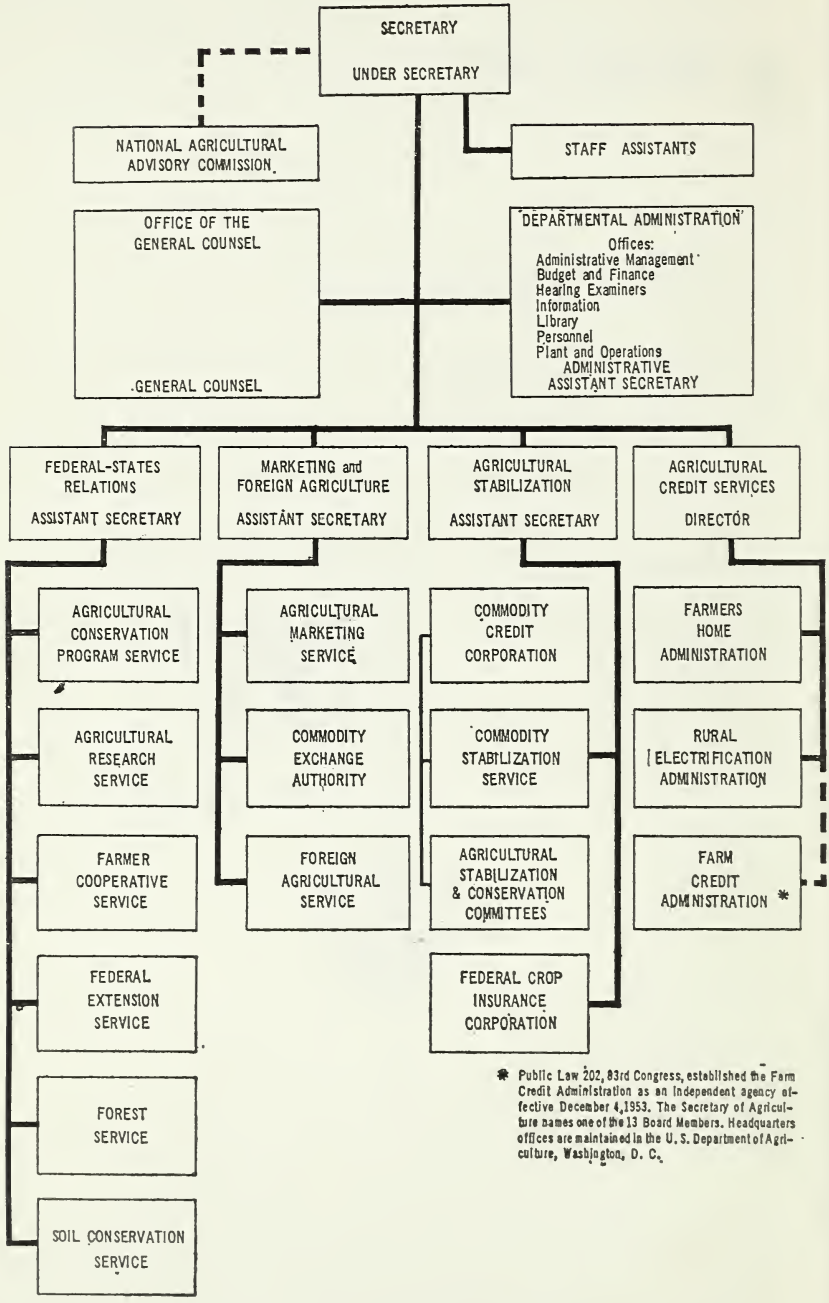
UNITED STATES DEPARTMENT OF AGRICULTURE



* Public Law 202, 83rd Congress, established the Farm Credit Administration as an independent agency effective December 4, 1953. The Secretary of Agriculture names one of the 13 Board Members. Headquarters offices are maintained in the U. S. Department of Agriculture, Washington, D. C.

245082

Department of Agriculture,
Washington, D. C.

The President,
The White House, Washington, D. C.

Dear Mr. President: This report is an account of how the Department of Agriculture served our farm and ranch people and all the people of the United States during the past year. In it you will find many examples of the work of our agencies, scientists, technicians, and administrators.

From its beginnings in 1862 the Department of Agriculture has always been, as President Lincoln said, in a particular way "the people's Department," one which perhaps more than any other is in direct contact with our citizens. Though the actions of USDA are primarily focused on promoting the freedom, prosperity, and well-being of the one-eighth of our people who live on the land, yet what the Department does affects all Americans everywhere—and indeed it affects millions of people in many parts of the world.

As Secretary of Agriculture I join with all the other employees of the Department in a certain pride of accomplishment. The 95-year-old history of USDA is itself a tribute to the devotion of its public spirited personnel. Their work through widespread programs has helped to make and keep our people well-nourished. Our American abundance of food and fiber has been, at times, an embarrassment of riches, but the productivity of the American farmer remains the foundation stone of the American standard of living.

I transmit herewith the annual report of the Department of Agriculture for 1957.

Respectfully yours,

Ezra Taft Benson,
Secretary of Agriculture.

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REPORT OF

The Secretary of Agriculture

1957

PROGRESS IN AGRICULTURE

Agriculture continued to advance in 1957. Solid progress was made in expanding markets and reducing surpluses.

Farm assets rose to an all-time high—$188 billion. Farmers have less than $11 in debts for each $100 of assets. Owner equities rose 7 percent during 1957 to an all-time high of $168.4 billion.

Farm ownership is also at a record high. Only one in three farms has a mortgage. The rate of farm foreclosures in the year ended March 1, 1957, declined slightly from the year before and continued at a low level.

Farm commodity exports totaled $4.7 billion in fiscal 1957, an all-time high in both quantity and value.

Surplus holdings of the Commodity Credit Corporation were cut by about one-fifth between February 1956 and December 1957.

The family farm continues to dominate agriculture. Ninety-six percent of our farms and ranches are family operations, about the same as 30 years ago.

The Soil Bank is helping reduce surpluses. Because of the Soil Bank's acreage reserve, in 1957 we had about 2 million bales less of cotton, 6 million hundredweight less rice, 93 million pounds less tobacco, 225 million bushels less corn, and 175 million bushels less wheat. The Soil Bank is also supplementing farm income, and conserving soil and water resources for future needs.

The Rural Development Program is under way in 30 States and is being expanded.

Prices received by farmers in 1957 averaged 3 percent above a year earlier, and the gains have been achieved primarily in the market, not through price supports.

Per capita income in 1957 of people on farms—from all sources—was the highest on record.

Our progress is slower than we would like—certainly it is not as fast as I would like to see it. But we have been moving ahead—soundly. We had a much better year in 1957 than would have been the case if we

had not made real progress in expanding markets and in reducing surpluses.

Our major problems in agriculture have come from attempting to support the prices of a few farm products substantially and continually above competitive levels.

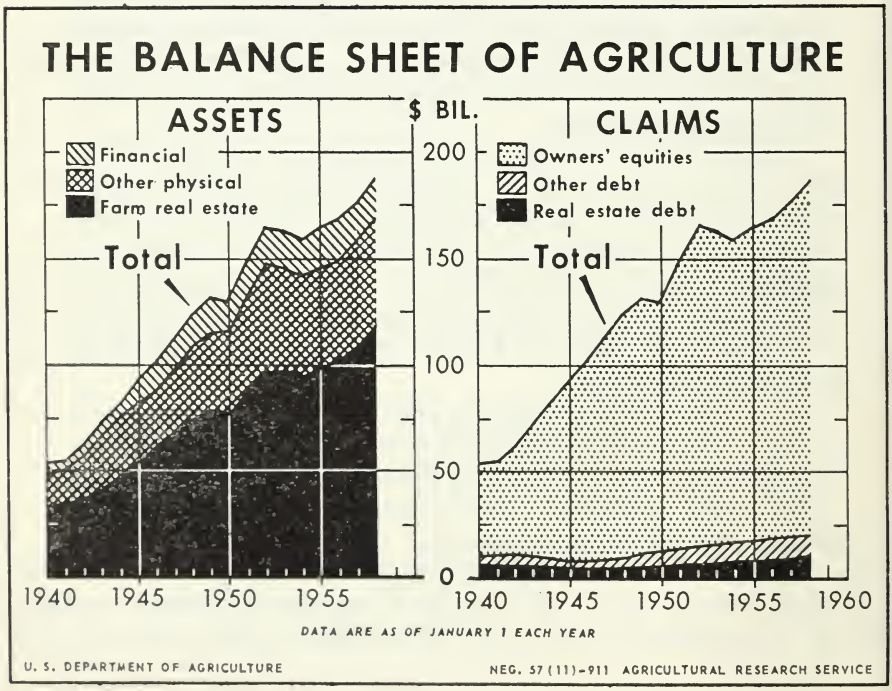
That is why the cotton producer now finds his acreage cut to a third its former level, markets lost at home and abroad, and cotton acreage doubling abroad.

That is why the corn producer now finds that acreage taken out of cotton and wheat has been shifted into feed grains. He finds the corn carryover rising to 1,350 million bushels and the acreage allotments so low that only a small fraction of corn farmers can even afford to stay within their allotments.

That is why the wheat farmer now sees the Corn Belt producer taking advantage of the provision under which he can plant up to 15 acres of wheat without penalty. Our records show that in 1956 wheat production in excess of allotments was about 100 million bushels.

All of these ills are in part the effects of the old price support-acreage control legislation.

To support prices of farm products artificially, continually, and substantially above competitive levels—at levels which destroy markets and



build up burdensome surpluses—this is clearly contrary to farmers' interests.

Our experience of the past 25 years plainly shows that agricultural production in this country cannot be successfully controlled by Government action.

Since 1940, the per acre yield of corn has risen 56 percent—wheat, 40 percent—cotton, 67 percent.

The yield per acre of the major crops in 1957 is estimated to be 27 percent higher than the 1947–1949 average. The technological revolution on American farms moves forward. Ours is a dynamic industry. It cannot, and should not, be regimented and controlled by Government.

To control crops effectively so as to maintain high rigid prices would mean setting allotments so low that farmers could not comply and still operate efficiently.

Congress would never vote such controls. If it did, no Secretary of Agriculture could enforce them. American farmers just wouldn't stand for such regimentation.

American agriculture cannot be successfully operated by rigid formula from a desk in Washington.

Now that the shortcomings of the old rigid price and control program are obvious for all to see, there are plenty of advocates touring the country, promoting new cure-alls.

One of these is the production-payment program, sometimes referred to as "deficiency payments" or "compensatory payments" plan. Under this system farmers would receive Government payments equal to the difference between actual free market prices and some specified support level.

The Department of Agriculture recently analyzed the costs of two possible direct payment programs. Under one program it was assumed that farmers would be paid the difference between 90 percent of parity and the estimated annual market prices that they would receive on all their marketings of principal commodities. Under the second program, payments would still be at the 90 percent level, but would be limited to the quantities that farmers marketed for domestic disappearance and exports during the 5 recent years 1952–56.

The results of this analysis are startling. They should be known by every thoughtful citizen.

Under the first program the annual cost could exceed $10.5 billion. Under the second program, with payments restricted to a base period output, the annual cost would be in excess of $7¼ billion. Now, $10.5 billion is equal to 87 percent of the net income of all farmers in the United States in 1957. It's an average of around $2,200 per farm. But while many small farmers would get next to nothing, the really big farms would get many times the average. Even subtracting the cost of the present

support program, the direct payment programs would still involve a net additional outlay to taxpayers ranging from about $4 billion to $7 billion a year.

It is questionable that farmers want to depend on congressional appropriations for most of their net income. They understand that if they expanded production under the stimulus of the program and Congress did not appropriate compensatory funds they would be in very serious trouble.

Farmers know that such a program would result in a completely controlled and regimented agriculture. They know that such a program would also be a long step toward a socialized agriculture.

I saw a direct payment program in actual operation in England. It has proved so costly that English farmers are dependent upon their Government for approximately three-fourths of their net income.

There are no panaceas for agriculture. Price support programs when used must be sound—and allow as much free play of the market mechanism as possible.

My view regarding farm programs can be very simply put. I favor programs that help farm people by repairing, improving, and bolstering the enterprise system which has made American agriculture the envy of the world. I oppose programs which tear down, weaken, or erode the enterprise system. I oppose programs which destroy markets, which create distortion and inequity in agriculture, and which contribute to inefficiency.

Too many people have the false impression that most farm prices and incomes are Government supported and on an artificial basis. It is not so. Most farm products are being sold competitively—on free markets.

Few people fully realize the extent to which price supports are now concentrated in just a few crops. Let me cite some facts.

Items from only 13 price-supported crops, plus dairy products, are in Government inventory—out of about 250 commodities that farmers produce.

The so-called basic crops (wheat, cotton, corn, rice, peanuts, and tobacco) bring in a little less than 24 percent of farm income. Yet these crops receive most of our price support expenditures.

The total costs of our activities primarily for price and income stabilization in fiscal 1956 and 1957 were $5.2 billion. These costs are high because we are moving the commodities acquired years ago, under the old programs, and charge these costs off as the commodities are moved.

More than four-fifths (82.2 percent) of these stabilization costs were for four commodities. In the past 2 fiscal years wheat and cotton accounted for more than 48 percent of the total cost of our stabilization programs.

We estimate on the basis of farm marketings that nearly four-fifths (79 percent) of these costs were for commodities produced by about one-fourth of our farms—the large-scale farms with marketings of over $5,000 per year. The cost for fiscal 1957 is estimated at $2,000 per farm of such size.

In the 1957 fiscal year alone the costs of programs primarily for price and income stabilization totaled $3.3 billion. If this had bought a solution to our farm problems, it would have been a bargain. But we still have the problems. This huge expenditure has not solved the problem of overproduction—or of unstable farm income—or of our low-income farms.

Nor can these problems be solved without further changes in the old law—changes that eliminate rigid formulas and widen the range of flexibility in the use of price supports.

I believe we can never solve these problems so long as we emphasize price to the virtual exclusion of other income factors. Farmers spend income, not price. What is it that makes net income? Surely it is not price alone—it is price, times volume, less costs.

Agriculture has been and is being hurt by too much emphasis on parity ratios and rigid formulas which at best are weak measuring rods for today's changing agriculture.

In the fall of 1957 five members of my staff and I made a market development trip abroad. We met with farm people, representatives of the trade, and government officials in a total of 12 countries. The purpose of our trip was to help further expand markets abroad for American farm products, to see our programs in operation, and to promote better understanding within the family of nations.

On my return people asked me if my thinking on agricultural policy had changed since my trip abroad.

Certainly many things are clearer to me than they were before. The opportunity of using our abundance to raise the level of living in the underdeveloped nations is now clearer.

But my view on the role of Government in agricultural affairs is unaltered.

I saw nothing to indicate that a handful of Government experts are better qualified to pass judgment on what the farmers should plant and market than are the farmers themselves.

There are many ways in which Government can help farmers meet their many problems.

Here are some of them:

Searching out new facts and getting this information widely distributed.

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Helping farmers conserve and use their soil, water, and forest resources.

Aid to farmer cooperatives.

Finding new crops, new uses, and expanded markets.

Constructive use of credit services supplementing private services.

Means for strengthening farmers' bargaining power.

Marketing research.

Supporting prices of farm products at reasonable levels—for use not storage.

In most of these areas our present programs are the soundest in the world. We must keep them so.

FEDERAL-STATES RELATIONS

AGRICULTURAL RESEARCH SERVICE

An Iowa dairy farmer joined the new Weigh-a-Day-a-Month Plan and now knows which of his cows pay for their keep.

A California grain dealer has stopped losing money to the grain-devouring khapra beetle since his warehouses were fumigated in the program to wipe out this costly pest.

An Arizona cottongrower can now get more dependable seed of the new Pima S–1 extra-long-staple variety.

A cattleman in Florida was among the first to benefit from a new method of screwworm fly destruction, using radioactive cobalt, which was pilot tested in his area.

A farm family in Virginia is making sure that meals contain enough calcium and vitamin C. Nutrition education stresses the importance of these nutrients which are most often short in rural fare.

These persons and millions more throughout the United States benefited in the past year from research and development programs conducted by the Agricultural Research Service either alone or in cooperation with State agricultural experiment stations and other agencies.

New and Better Crops

New varieties for industrial markets: Crops with specific advantages for industrial use are opening important markets for farmers.

Dawn, the first dwarf castorbean variety, will enable farmers to supply more of the needs of United States industries, which now import 138 million of the 140 million pounds of castor oil they annually require. The new variety resists seed shattering and can be readily harvested by machine.

The oil from safflower seed has qualities useful to makers of a variety of products—from plastics to paints. Production of the crop has largely been limited to dryland and subirrigated areas. New varieties resistant to root rot in irrigation farming have been developed and considerably expand the production range of the crop. A limited amount of seed may be commercially available in the coming year.

A large potential market exists for corn that can produce starch containing 80 to 90 percent amylose, a substance that contributes strength and other desirable properties to films, fibers, and special coatings. Cornstarch normally contains only about 28 percent of amylose. Corn breeders have found and incorporated genes into corn lines that produce starch with an amylose content of up to 82 percent.

Use of cottonseed meal in poultry and livestock feeds has long been limited because it contains gossypol—a substance that in its unmodified state is toxic to poultry and nonruminant animals. The discovery of wild cotton stocks low in gossypol provided plant breeders with genes enabling them to develop promising crosses that produce high lint yields and seed naturally low in gossypol.

Almost all of the extra-long-staple cotton now planted in the Southwest is the recently introduced Pima S–1. The variety, however, has a tendency to develop some seeds with hard moisture-resistant coats that prevent or retard germination. This disadvantage has been overcome by the development of a hot-water dip that enables most hard seeds to germinate in 2 to 3 days.

Seed storage laboratory. Funds were appropriated for a national seed storage laboratory at Fort Collins, Colo., for the permanent storage of a small quantity of seed from every type of potentially valuable plant found throughout the world. Seeds will be available to Federal, State, and commercial plant breeders to assist them in developing new varieties of plants that possess disease and insect resistance, drought resistance, and other desirable characteristics. The laboratory is expected to be ready for use in 1958.

Plant growth regulators: Gibberellic acid, a potent plant growth regulator produced from an Asian fungus, is one of many known plant growth regulators receiving research attention. Present high interest in gibberellic acid in this country was stimulated in part by chemical identification and process development work in an ARS utilization research laboratory. ARS scientists have applied the growth regulator to more than 50 kinds of economic plants. It changed the growth pattern of most of these plants. At present it appears promising as a useful production aid in varied but specific situations. It could, for example, give such plants as peanuts a growth spurt to help seedlings past a stage when they are easy prey to diseases. Or it might force seed production of biennial crops, such as cabbage and beets, in the first rather than the second growth season.

Research is taking some of the guesswork out of another plant growth regulator—napthaleneacetic acid (NAA), used as a fruit thinning spray. By tagging NAA with radioactive carbon 14, scientists learned that more of the chemical penetrates leaves exposed to freezing or slightly lower temperatures. Growers can now be advised to reduce concentrations of NAA in thinning sprays applied after even light frost. Experiments also showed that the addition of a detergent (polyoxyethylene sorbitan monolaurate) to NAA sprays increases their fruit thinning effectiveness.

Meeting Pest Threats

Khapra beetle: A Federal-State program to wipe out the khapra beetle—the world's worst devourer of stored grains and seeds—from the three infested Southwestern and Western States has neared its

round-up goal. Only a few of the 504 properties known to be infested since the pest was discovered here in 1953 remain to be fumigated. Entire warehouses are enclosed in plastic tarpaulins and then a fumigant is applied that gives a 100-percent kill.

Mediterranean fruit fly: The importance of research findings to practical pest control operations was well illustrated in the Mediterranean fruit fly eradication program in Florida, which was started in April 1956 and now appears to be in the windup stage. Continuing surveys will be required following this stage to confirm that the actual eradication of the Medfly has been accomplished.

The rapid conquest of the invader, which attacks citrus and about 100 other southern plants, would have been impossible without the knowledge of the nutritional needs of the pest and without the insecticide discoveries achieved since the last major battle with the Medfly. These advances led to development of a bait-spray formulation effective in destroying adult Medflies and the discovery of an effective attractant, angelica-seed oil, both ready for the 1956 campaign. A few months later, a synthetic attractant material was discovered just at the time when the supply of the relatively scarce angelica-seed oil had dwindled.

Gypsy moth: A Federal-State air attack on the gypsy moth, which has damaged trees in Northeastern areas for almost a century, was conducted successfully over an area of 3 million acres in New Jersey, New York, and Pennsylvania. The past season's spraying with an amount of DDT per acre established by research as being adequate to destroy the gypsy moth without creating a health hazard or causing serious damage to wildlife is part of a strong effort to eradicate the pest from 38 million acres in 9 States.

Witchweed: Witchweed, a harmless looking plant parasite that attacks roots of corn and other grass-family crops, was identified in the United States in 1956. It is capable of outdoing the corn borer in wrecking a corn crop. Federal quarantine measures to prevent its spread have been outlined, and survey work initiated to determine outposts of infestation. A program to evaluate chemical controls is one of the varied research tasks undertaken. It is known that 2,4-D will kill the weed. Scientists are searching for a chemical that will destroy the seed.

Soybean cyst nematode: Quarantine measures have been put into effect to halt the spread of the soybean cyst nematode, which threatens not only soybeans but also lespedeza, common vetch, and snap beans. This speck-sized Oriental eel-like worm appeared in one Southern State in 1954 and has since been found in four additional States. Soil fumigants tried thus far have left some living cysts and protection would have to be renewed yearly—an expensive prospect. Encouraging progress has been made in developing soybean varieties less susceptible to the nematode. In 2 years, wide variation has been observed in the resistance of tested stock, and last spring the world collection of some 6,000 genotypes, assembled over 60 years, was planted for further study. Out of 1,300 snap bean varieties tested for reaction to the soybean nematode, 6 have shown promise.

Spotted alfalfa aphid: Rapid progress is being made in developing alfalfa varieties resistant to the spotted alfalfa aphid, a serious pest that appeared in the Southwest in 1954 and now infests 30 States, including 13 east of the Mississippi.

The Lahontan variety has well demonstrated its inherent ability to resist the pest in those parts of the West where it is adapted. Using Lahontan's parent strains, plant breeders are now developing resistant varieties adapted to other areas. Resistant plants have also been found in several varieties other than Lahontan.

Better Returns From Livestock

New plan for dairymen: The Weigh-a-Day-a-Month Plan—a simple, low-cost milk production recordkeeping program, was introduced during the year primarily to extend the advantages of recordkeeping to owners of small herds. Ninety percent of the country's dairy farmers manage herds of 14 cows or less. Accurate records on milk production and feed consumption for each cow will provide owners with a sound basis for profitable management. About 3,000 herds are now under the plan.

The first Iowa farmer who enrolled in the Weigh-a-Day-a-Month Plan said, "We wondered about some cows before we started, but not after we looked at the record. Our goal is 40 pounds of milk per cow a day. I want 4 pounds of milk from every pound of concentrate feed."

New knowledge of feed: Cattle were found to gain faster on a mixture of chopped hay and grain, or pellets made from a mixture, than on long hay and grain feed separately.

Complex protein supplements have been found unprofitable for fattening 2-year-old steers on high silage rations in a 4-year series of trials. Soybean meal was as effective in providing protein as the complex supplements.

Imbalanced rations—high in calcium and low in zinc—were found to be the cause of the mangelike disease known as parakeratosis, which seriously retards the growth of pigs. Adding zinc to the ration in corrective proportions overcomes or prevents the deficiency.

The addition of as much as 8 percent of stabilized lard to turkey poult rations resulted in extra growth on 11 percent less feed during certain stages of the poults' development. Fat has heretofore been added to some commercial turkey feeds, but usually at rates of 5 percent or less.

Scientists are endeavoring to isolate and identify a chick growth factor in egg yolk and develop a low-cost source so it can be used as a feed supplement. The existence of the growth factor was discovered by ARS research workers several years ago. More recently it was shown that the factor, added in the form of egg yolk to a good chick diet, increased the growth of birds by 10 to 12 percent.

Keeping quality of boar semen tested: Boar semen shipped long distances by air remained viable for about 40 hours and nearly half of 24 sows inseminated with the sperm farrowed litters of strong, healthy pigs. The semen gave best results when shipped at temperatures within a range of 59° to 68° F. Swine semen cannot survive freezing, as can semen of cattle. The pilot-tested preservation method promises practical means of widening the dissemination of superior swine germ plasm needed for increase of superior breeding stock, such as meat-type lines.

Reducing lamb mortality: A study of death losses of lambs in the ARS experimental sheep flock indicates that feed and care of ewes during pregnancy may rank high as influences on survival. Records show that 16.5 percent of all lambs were stillborn or died within 14 days after birth, and that these weighed at birth about 1½ pounds less than

the lambs that survived. Ewes that lost their lambs gained an average of only 4.9 pounds during pregnancy compared with an average gain of 13.7 pounds by ewes whose lambs survived.

Fighting Animal Pests

Screwworm: Since it was proved possible to rid an island of the screwworm by releasing sterile male flies, this method has been pilot-tested successfully under mainland conditions. Male flies, made sterile by exposure to radio-active cobalt in the pupal stage, are released from planes. They mate with native female flies, which lay millions of unhatchable eggs. The females mate only once. As many as 2 million sterile screwworm male flies were released weekly over 2,000 square miles of Florida rangeland. The successful Florida test paved the way for a program to eliminate the screwworm from the Southeast where it does from $10 million to $15 million damage yearly to stock.

Cattle grub: The cattle grub costs the livestock industry millions of dollars annually in losses of meat, milk, and damaged hides. Promising experimental results have been obtained with a phosphate chemical administered orally, and with another that is sprayed onto animals. The insecticides move through the body fluids of the cattle and kill the grubs in the tissues, when applied at proper levels, before they can damage skin or hides.

Bovine brucellosis: The eradication program against bovine brucellosis has advanced to the point where less than 2 percent of the cattle tested are found to be infected, but the disease still causes losses to farmers and ranchers of about $40 million a year. The program was strengthened when new rules became effective governing the interstate movement of cattle as a protection against reinfection in States and areas reaching modified-certified brucellosis-free status. Two States achieved modified-certified brucellosis-free status during the year, bringing the total to seven. In addition, 409 counties in 25 other States and in Puerto Rico had this status as of June 30.

Leptospirosis: Progress in the brucellosis eradication program has made scientists and livestock owners more aware of the incidence of leptospirosis among cattle. Symptoms heretofore attributed to a disease such as brucellosis are now being traced to leptospirosis. A spot-check survey was started in 12 States and Puerto Rico in 1957 to determine the percentage of herds in which cattle show a reaction to the agglutination test for the disease. Results are expected to give a better understanding of the magnitude of the leptospiral problem. No completely effective methods of treatment and control have yet been developed. Herd management and sanitation offer the best methods of prevention and control immediately available.

Chronic respiratory disease: Progress has been made in understanding one of the newer problems of the broiler industry—chronic respiratory disease, which is caused primarily by pleuropneumonia-like organisms. Quick tests for identifying the disease have shown promise. Medications thus far used experimentally have been costly and effective only in heavy doses. Studies have shown that keeping chicks in small, separated groups lessens spread of infection.

Guarding Against Foreign Pests

Plant pests: Inspection and quarantine continue to protect the nation's crops from migrant insects and diseases. Plant quarantine offi-

cers, in their search for plant pests, inspected 111,000 incoming airplanes, 58,000 ocean vessels, 69,000 cargo importations of plant material under permit, and 7,800,000 foreign mail parcels. They also inspected 106,000 freight cars and 18,500,000 vehicles crossing the Mexican border.

Under a new arrangement the Department financed, from funds appropriated for the purpose, enough additional customs inspectors to resume thorough examination of passengers' baggage for unauthorized agricultural materials. The inspectors intercepted 290,000 lots of unauthorized plants and plant products, many harboring pests, an increase of 19 percent over the preceding year when only spot checks could be made.

Protective activities during the year prevented entry of 15,000 lots of insects, plant diseases, nematodes, snails, and mites, including many of the world's most destructive crop pests. The Mediterranean fruitfly was intercepted 63 times, the khapra beetle 19 times.

Animal pests: Vigilant inspection of all horses, cattle, swine, and poultry offered for import prevented entry of many disease-infected animals. Out of 284,000 cattle inspected, about 2,500 disease cases were detected. Particular attention was given to the landing of meats and meat garbage from airplanes and ocean transports provisioned in countries where foot-and-mouth disease and rinderpest exist. More than 93,000 pounds of prohibited or restricted meats were seized.

Safeguarding Meat Supplies

Over 100 million animals and nearly 18 billion pounds of meat and meat products were federally inspected at 1,244 meat packing and processing plants.

Reports on infected carcasses gave valuable assistance to animal-disease eradication and public health authorities. In one instance, veterinary meat inspectors at two packing plants found 22 beef carcasses infected with tapeworm. These animals were traced to one midwestern farm. Further investigation traced the infection to a hired man who had returned from Army duty in Europe unknowingly harboring the parasite. The worker was treated and cured, and the parasite invasion halted.

Many-Purpose Insect Repellent

A many-purpose insect repellent has been developed and approved for use, and is now in commercial production. This chemical, diethyl toluamide, is unusually effective against ticks, fleas, chiggers, biting flies, and all species of mosquitoes. It can be applied safely to the skin. Since one application is likely to give several hours of protection, the compound is well adapted to the needs of outdoor workers, campers, and sportsmen.

Advances in Farm-Product Utilization

Dialdehyde starch from cereals: A new nonfood market for grains is being opened up by continued research on the properties and production of versatile dialdehyde starch derived from ordinary grain starches. In leather experiments, the product has shown promise of providing industry with a tanning agent that can work faster and better than vegetable tannins now imported at the rate of 240 million pounds a year. Experiments indicate the starch may also prove valuable in such industrial processes as sizing paper and textiles and making adhesives and plastics. Several industries have applied for license to use public service patents covering production of the starch.

Vinyl stearate from fats: Commercial production of vinyl stearate, now under way, promises substantial new markets for inedible animal fats. Utilization research demonstrated the suitability of vinyl stearate in producing paper coatings, textile finishes, water-repellent vehicles for water-base paints, flexible films, food packaging and electrical applications, and durable rigid plastics.

More competitive cottons: Cotton can compete with synthetic fabrics in such featured advantages as wrinkle resistance and crease retention. A resin finish applied to made-up cotton garments provides the wrinkle resistance and also permits setting a garment, at the partially dried stage, into creases, pleats, and well-flattened seams. The lines have remained firm even after 12 launderings. The resin finish has been experimentally successful with made-up cottons as different as delicate lawn blouses for women and sturdy twill slacks for men. Final development and commercial application are aimed primarily at the men's summer-weight suit and slack market which now takes 173 million square yards of fabric yearly—only 11 percent of it cotton.

Frozen bread practical: Research has succeeded in putting frozen bread on a practical basis. Several bakers are now marketing it. Freezing stabilizes quality and thus makes possible a more flexible and orderly distribution system. According to some estimates, the industry may find it profitable to freeze as much as one-third of the 11 billion pounds of baker's bread eaten annually in this country.

Better quality frozen foods: More efficient management of frozen foods by industry and consumers may result from a comprehensive study of the effects of time and different temperatures on frozen food quality. Laboratory tests have been devised, making it possible to link alterations in flavor, color, texture, and nutritive value to specific changes in frozen foods kept at temperatures above zero. Findings to date disprove the common misconception that undesirable changes in frozen foods subjected to temperatures above zero can be reduced by returning foods to zero.

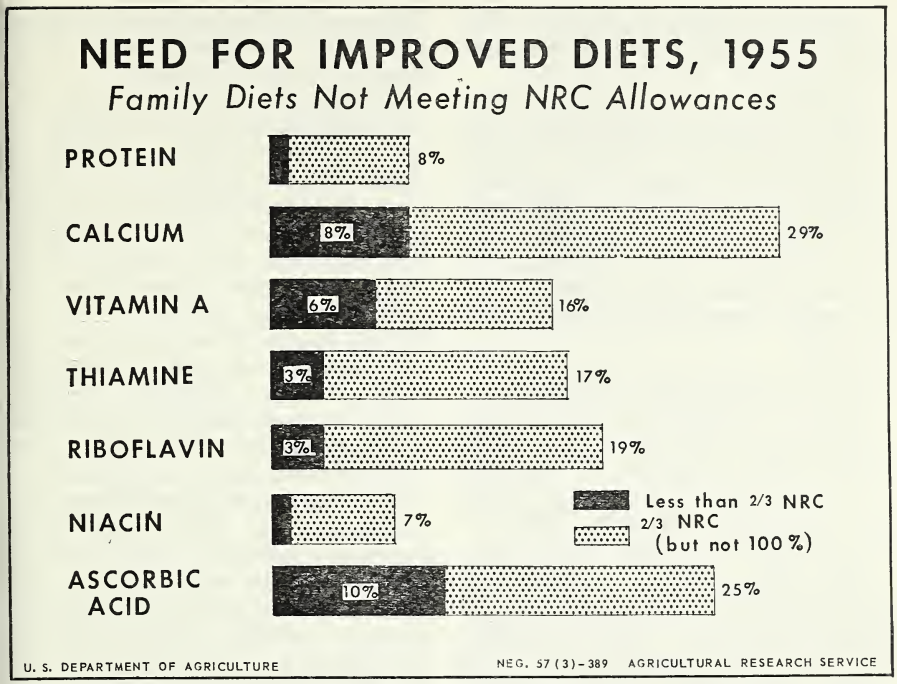
Better Cotton Cleaning Equipment

Machine-picked and hand-snapped cotton, even after ginning, contains more trash than clean hand-picked cotton. Since about one-half of the crop is now machine-picked or hand-snapped, textile mills were presented with the need for improved cleaning equipment. Researchers have developed the ARS Carding Cleaner, which, in pilot-scale tests on 5 varieties of cotton, proved 5 times as efficient as conventional equipment. In addition, lint losses were remarkably low and fibers were not damaged.

Facts on Family Use of Foods

Information on family use of 200 familiar food items was published from the Department's 1955 nationwide household food consumption survey of 6,000 representative households. The new facts and figures, with households classified by income and for urban, farm, and rural nonfarm groups, are already in wide demand.

The survey shows that the average amounts of food brought into family kitchens are generous and that the nutritional level of the country as a whole has improved. A large-scale survey in the 1930's, classed one-third of the diets as "poor." Today the proportion would probably be as low as 10 percent, based on the standards used in the 1930's. Enriched bread and other grain products, new develop-



ments in marketing foods, and nutrition education, as well as better economic conditions, have helped improve diets.

The new survey shows, however, that many families get less of some nutrients than is recommended by the National Research Council. Calcium is most often short, followed by vitamin C. If everyone in this country whose diet is short in these two nutrients met nutritional recommendations, an estimated 9 percent more milk would be used and about 6 percent more fruits and vegetables.

A new food plan to aid homemakers in choosing foods for good nutrition was developed, based on progress in knowledge of human nutritional needs, nutrient content of food, and family food habits. The plan features 4 broad food groups as a foundation for a good diet. Foods not included in the 4 groups are the kinds nearly everyone uses daily, and are expected to round out meals and provide additional food energy and other food values.

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Data on Farm Families' Spending

In 1955, for the first time since 1941, information from a nationwide sample of farm families on expenditures for a complete list of goods and services was obtained. Analyses are providing basic guidance for planning programs on farm and home management.

The 4,000 representative farm operator families had average annual current consumption expenditures of about $2,900 for goods and services. About 30 percent was spent for food; 25 percent for dwelling upkeep, household operation, and furnishings and equipment; and slightly less than 15 percent each for clothing and transportation. In addition to expenditures for current consumption the

families averaged about $250 for gifts, contributions, and personal insurance.

In dollars of constant purchasing power, the level of expenditures in 1955 was about two-thirds higher than in 1941. Larger proportions of the total expenditures were used for medical care and recreation in 1955 than in 1941. Clothing, tobacco, reading, and education, on the other hand, took smaller proportions.

New Data on Farm Economics

Farm economics studies provided new information on present relationships between farmers' financial returns and such conditions as farm type and size, financing, and varied operational methods.

Net farm incomes in 1956 were slightly higher than in 1955 on 16 out of 29 important types of commercial farms in major farming areas. Net incomes remained about the same on 3 types of farms and were lower on 10. The range of profit and loss was from about $21,000 net income on large-scale Delta cotton farms to loss of about $1,240 on drought-affected cattle ranches in the Southwest.

Changes in crop yields and price-cost relationships were mainly responsible for changes in 1956 net farm incomes compared with 1955. Crop yields were higher on 18 types of farms, lower on 11. The price-cost ratio was more favorable on 11 farm types, less favorable on 14, and unchanged on 4.

The forces of technological improvement, changing cost-price relationship, investment requirements, and availability of off-farm employment have all combined to increase the average size of commercial farms in the United States, and to reduce the number of farms needed to supply available market outlets. Recent estimates show that farms with value of sales of $5,000 or more (in 1954 dollars) increased in numbers by 44 percent from 1939 to 1954. On the other hand, the number of small-scale commercial farms with less than $2,500 value of sales declined by 57 percent.

COOPERATIVE AGRICULTURAL EXTENSION SERVICE

When the F. C. family of seven, living in Columbia County, Fla., sought help from the Extension Service, they were discouraged and losing money on their 86-cow dairy herd. Feed costs were high. During the previous 4-month winter feeding period, they lost $400 a month.

"We were about ready to quit," said C., "but after talking to the county agent, we decided to operate the dairy one more year and try to grow some of our winter feed such as hay and silage."

That year the C's also started a long-term Farm and Home Development plan. With their county Extension agents, they discussed problems and plans and came up with both short- and long-time goals.

The following winter, 128 tons of home-grown roughage helped them realize dairy profits of $890 per month in contrast with the previous winter's losses.

Of 10 new practices the C's decided upon in their Farm and Home Development plan, 9 were in operation after 2½ years. In 1956, they put 320 acres of their 400-acre farm into pasture and field crops, and produced 400 tons of silage. Milk production now averages 7,500 pounds per cow annually. With their enthusiasm about farming renewed, and their debts considerably lower than a few years ago, the family is planning a new home and looking eagerly toward the future.

Except during national emergencies, never has there been greater need, or demand, for speeding agricultural and home economics research information to the fields and homes of rural America. This is the aim of some 14,000 professional workers of the Cooperative Extension Service.

County Extension workers use demonstrations, tours, meetings, personal calls, mass communication and many other teaching methods. During calendar year 1956 some 10,290,800 families responded by improving their farming and homemaking practices. Seven percent more families were assisted than during the previous year. For every 3 families aided in 1953, 4 families were helped in 1956. Such an increase would have been impossible except for the valuable aid of some 1,266,000 volunteer local leaders who extend the reach of Extension. They did their job well. The meetings they conducted were attended by over 20 million persons in 1956.

In an economic atmosphere that demands top farm efficiency, and amid a growing conviction on the part of rural people that research and education are vital to progress, Extension can expect more calls for more and new kinds of assistance.

Extension personnel continually strive to develop new teaching methods designed to help them meet more effectively the growing, changing needs of the people they serve. In more than 2,300 counties, 56,000 families used the Farm and Home Development method last year to study and solve problems of the farm and the home. Extension agents helped these families analyze their resources and map out plans to reach their goals. Over 23,000 families started developing long-range plans for improving their farms and their homes; another 48,000 families put their plans into action with Extension assistance.

Planning for the future is, of course, as appropriate for communities and counties as for individuals and families. Through an approach called program projection, Extension is helping to accomplish this. More than 70,000 people in 971 counties, well along with program projection work, are members of committees studying and analyzing information about their resources. This information enables committeemen to establish county goals and to set up appropriate programs. Committees in 462 other counties are just embarking upon this adventure in planning.

New Extension techniques have not outmoded such time-proven methods as demonstrations, personal visits, tours, and meetings. A scene that over the past 40 years has become a familiar part of rural America—the county Extension workers counseling with the farmer, the homemaker, the rural youth—was reenacted hundreds of thousands of times during the year. Problems of crops, livestock, marketing, planning and managing the farm and home business, family economics, nutrition, clothing, family life, farm buildings, 4–H Club projects, safety, soil and water conservation were dealt with.

Some problems causing farmers and homemakers to seek aid were specific and localized, such as those occasioned by the invasion of a half-dozen States by the dangerous soybean cyst nematode and the quarantine that followed. Others were general, such as the need for better understanding of the Soil Bank program. County agents and State extension officers used every form of mass communications and other teaching methods to help farmers understand the Soil Bank and other Government programs.

In Colorado the State Extension Service prepared news articles about the Soil Bank for use by county agents, wire services, radio news services, daily and weekly papers. Tape recorded radio programs about the Soil Bank were broadcast 190 times over Colorado stations.

The agricultural Extension agent in wheat-growing Kit Carson County joined forces with the County Agricultural Stabilization and Conservation Committee to organize a Soil Bank information program. Scheduling a series of farmer meetings, the agent led off each one with an explanation of the Soil Bank. To help growers who had little chance to visit his county seat office, he opened up a second temporary office in the opposite end of the county. He inserted information about the Soil Bank regularly in his news service to the county's three newspapers.

Of 1,034 farmers in Kit Carson County who have wheat allotments, 956 signed up in the 1957 acreage reserve—92½ percent participation.

Helping insure a clean food supply for the Nation became a major goal last year for many Extension workers in the wheat-growing areas. In mid-1956, the Food and Drug Administration announced that tolerances of contaminating material permitted in wheat shipped interstate for human consumption would be sliced in half. Grain that did not meet these standards was subject to seizure and diversion to nonfood use at considerable financial loss to the owner.

Accordingly, Extension workers in 33 States intensified Clean Grain educational programs, guided by clean grain committees representative of agriculture and allied interests. Foreign material can contaminate wheat at any point from the grower's field to the processing plant. Working as teams, State Extension specialists in agronomy, entomology, information, engineering, and marketing pooled their efforts and assisted county agents in reaching farmers, elevator operators, shippers, handlers, and processors with recommended measures for keeping grain clean.

But in spite of the stricter tolerances, seizures during the latter part of 1956 and early 1957 were only one-third as great as a year earlier.

Extension agents continued to help farmers fight drought, diseases, and insects and other pests. Working with State and Federal agencies, Florida Extension agents aided in a campaign that, in a single year's time, raised the prospect of total elimination of an infestation of the destructive Mediterranean fruitfly in that State. Extension workers also entered the fight against witchweed, a pest of corn that appeared for the first time in the United States in 1956 with a potential for destroying more corn than the European corn borer.

The Cooperative Extension Service places high priority on educational work that helps agriculture solve marketing and utilization problems.

Henry County, Ill., affords a good example of the progress being made to encourage the raising of meat-type hogs. Stimulated by an Extension school on the selection of meat-type breeding stock, Henry County farmers are now firmly supporting two action programs aimed at raising hogs tailored to consumer demands. These are a county boar testing station and a probe-and-weigh program for selecting breeding stock on the farm. About 1,100 meat-type gilts were selected in the county during the past year, using these program facilities.

In Iowa, 128 Extension meetings and 67 live-hog probing and carcass demonstrations were attended by more than 21,000 farmers. Extension helped organize swine improvement associations which, in turn, sponsor swine evaluation stations designed to help locate superior meat-type strains of hogs. To encourage quality grading and the payment of price differentials for meat-type hogs, Extension has held grading schools and live-hog and carcass demonstrations in many States to train qualified graders.

Home economics Extension workers assisted more than 6½ million families during 1956. Although the heaviest demand was for help with human nutrition problems, requests for other types of home economics assistance continued to grow. Nearly one-third more families asked for help with financial planning than 3 years earlier. Assistance with family business affairs has increased 26 percent since 1953, while demand for help with farm housing has gone up more than one-third. There has been a 42 percent increase in requests for assistance with consumer information about clothing.

Making safety their number one project, home demonstration club members in Coahoma County, Miss., have created a statewide consciousness toward preventing needless accidents.

The homemakers became alarmed at the large number of nighttime highway accidents in their county involving automobiles and poorly lighted wagons loaded with cotton being hauled to gins. Encouraged by their home demonstration agent, they conducted a 6-month, countywide survey which disclosed that 25 percent of all accidents occurred on the highways. The homemakers personally applied reflective safety tape to 160 wagons. Interest was stimulated by a cooperative press and radio to the extent that others joined them in applying safety tape to some 800 vehicles.

This was just the beginning. Club members schooled themselves in safe driving, took driver proficiency tests. This project spread to over 1,000 home demonstration clubs throughout the State.

4–H Clubs

Membership in the country's 90,499 4–H Clubs is at an alltime high of 2,164,294 boys and girls. Last year club members conducted 4,502,022 projects in more than three dozen categories. More than 9 million birds were cared for in poultry projects. 4–H members grew nearly a half million acres of corn, other cereals, and vegetables, and owned and cared for 1,304,332 head of livestock.

Extension's program for young men and women reaches 262,710 youths who are beyond 4–H age and interest levels.

More than 371,000 volunteer leaders help guide 4–H Club work. Their aid has been invaluable, especially as Extension has attempted to meet a trend toward urbanized expansion resulting from additional requests for 4–H Club work in towns and cities. At local request, plans were completed last year for bringing 4–H Club work to many Chicago youngsters. These plans were based on experiences in such other large cities as Denver, Detroit, Indianapolis, and Portland.

With from 50 to 65 percent of the rural youth moving from farms to cities, much attention has been focused upon career exploration. This has become a major program area for older youth in 4–H Clubs. Also patterned to meet the grow-

ing-up needs of club members is a new automotive care and safety project that was given a trial run during the past year. Youth in 110 counties in 33 States took part in the project.

FARMER COOPERATIVE SERVICE

"I am writing to reaffirm 'by the written word' my hearty commendations to you and others of your staff who assisted in developing and activating the recommendations of our Research Committee into a program of management guidance. The first session and even more especially the second one made contributions to the management of member associations and management and department heads which had never before been provided for them. It is quite conservative, I think, to expect that much improvement in their operations should result from the two seminars already held and the third yet to come."

This comment was received by the Farmer Cooperative Service after it helped a livestock cooperative plan a series of three training programs of 3 days each for key management people in its 23 State associations that altogether serve half a million farmers.

In answer to a request from the Wichita Bank for Cooperatives and the Kansas Council of Farmer Cooperatives, FCS personnel participated in a Management Short Course held at Kansas State College for 120 directors and managers and in similar conferences in Wisconsin, Illinois, Michigan, New Mexico, and Oklahoma.

These are two of many examples illustrating how FCS applied research and educational experience gained over past years to one of the most pressing problems facing farmer cooperatives today—how to train and develop managers and directors of the caliber needed to meet today's complicated business problems.

Improving efficiency: Throughout the year FCS studied numerous cooperative operations to determine possible improvements that would add to farmers' net incomes.

A farmer cooperative in Florida was forced to decide whether to build its own feed mill or continue to buy feed from other sources. A Georgia regional cooperative had to have the right answer to the following questions: "Will it be economically feasible for us to acquire a fertilizer plant? With our manufacturing facilities, can we better serve the several thousand members of our 12 affiliated local association? And if we decide to build or purchase, where should the plant be located?"

Both these cooperatives asked Farmer Cooperative Service to supply information on which they could base sound decisions.

After studying prices for feed ingredients available locally and of costs for transporting mixed feeds from sources used, the Service pointed out to the Florida cooperative that it could mix its own feed considerably cheaper than it could purchase feed. This cooperative is now building its own feed mill. The farmers who are investing their capital in these additional facilities will benefit by getting their needed feeds at less cost to themselves.

The Georgia regional's situation was different. After a thorough study of fertilizer needs and poten-

tial costs of financing and manufacturing supplies, the Service recommended against acquiring a plant. It suggested buying mixed fertilizers from other cooperative manufacturers or examining the possibility of a joint venture with nearby regionals in manufacturing fertilizers. Other recommendations were greater use of high-analysis fertilizer, organizing the bargaining power of the locals more effectively, and carefully examining accounts receivables and credit and inventory policies to improve the cooperative's financial position.

Need for more coordination: Most marketing cooperatives are small businesses. Handling small volumes, they find it increasingly difficult to maintain markets for their farmer-members in view of demands from large-volume buyers such as chain stores and the competition of nationwide and well-advertised brands. FCS has been working closely with farmer associations handling fruits and vegetables, dairy products, poultry and eggs, rice, and beans to develop answers to this problem.

One answer suggested is more coordinated marketing by several cooperatives.

Domestic wool brings lower prices, generally speaking, than imported wools. To discover and counteract the reasons for this FCS interviewed 29 wool manufacturers and topmakers. A substantial number of buyers believed preparation of domestic wools should be improved. Most of them stressed the need for uniform standards in appraising and describing wool. The wool cooperatives and others in the industry, extension and college people, and other agricultural leaders are making wide use of the publication on these findings.

Bargaining associations: The Service studied and made suggestions to improve the organization and operation of fruit and vegetable bargaining cooperatives. The board of directors of a dairy bargaining association consulted FCS about enlarging its services. The association is now planning to build surplus milk handling facilities. In cooperation with the National Milk Producers Federation, FCS also helped this association work out better hauling procedures.

Improving quality: FCS is cooperating with Kansas State College in a study on how to better retain quality in wheat stored in elevators in that area. It completed a study of price differentials for live graded hogs. FCS work with production supply cooperatives also continued to stress service and quality improvement.

Transportation costs: FCS completed a study on losses to livestock in transit, getting data on shipment by truck and rail at 10 markets and covering about 4 million animals. The study showed in detail how distance, weather, and other factors affected losses and the actual losses found under different conditions.

An Ohio honey processing cooperative was located in the most congested area of a city, making it necessary for trucks bringing raw honey to the plant to unload and go on their way immediately without return loads of processed honey. The cooperative asked FCS to help decide where to relocate.

The cooperative has now located its plant on the freeway on the outskirts of the city and expects to realize savings of some $50,000 yearly on reduced transportation costs.

Statistical background: Of the 9,887 cooperatives included in the most recent FCS nationwide annual survey, more than 92 percent supplied information on their business operations. Continued progress has been made in improving statistical methods and developing better records to provide more accurate and complete information on these cooperatives. There has been an increasing demand for such information from the general public as well as from college and other research workers.

Cooperation with colleges, Extension, and others: FCS and the American Institute of Cooperation have now held four regional conferences on research in agricultural cooperation, plus the first national one in December 1954, for FCS staff and workers in various agricultural colleges. Two were held in the past year—at Texas A & M College for the Southwest and at Kansas State College for the Midwest area. Forty-four States have been represented at these conferences.

FCS carries on joint research projects with the colleges and works closely with extension services and vocational agriculture teachers, supplying them with large quantities of its educational publications. In an average year some 60,000 copies of these educational publications go out, mostly to extension and vocational agriculture departments.

Other educational work: In addition to conferences, clinics, and other types of meetings, FCS prepared 35 new or revised publications and distributed about 160,000 of its various publications during the year. It continued to use its monthly magazine, "News for Farmer Cooperatives," to get research results and other information out quickly to cooperative managements and those working with such associations.

During the year the fourth revision of "Legal Phases of Farmer Cooperatives" was completed in cooperation with the Office of the General Counsel. This revision added about 300 new cases, bringing the total to 1,500 cases of significant interest on cooperative organizations and their special problems.

FCS also plays an active part in programs that bring foreign cooperative officials and other agricultural leaders to this country to study our cooperatives. It helps plan their itineraries and gives them much background information. During the 12 months ending June 30, 1957, a total of 340 foreign participants representing 47 countries received individual and group training.

AGRICULTURAL CONSERVATION PROGRAM SERVICE

In 1951 Steuben County, N. Y., had a complicated conservation, economic, and land-use problem.

The county's 3,700 farms, containing 260,000 acres of cropland and 120,000 acres of noncrop pasture, faced increasing loss of soil fertility. On the thinning hillside soils, soil depletion and sheet erosion were serious, and valley farms suffered from floodwater deposits from the hill farms.

Though the farmers worked their land continuously, planting grain, timothy, and short-lived clovers to get enough forage and grain for their dairy cows, they still had to buy feed. Often they were hard pressed to pay for the feed and labor required. Most of them were working their land too hard and too often for too little return.

A number of the county's farmers turned to part-time, off-farm work to supplement their income.

An Extension Service committee analysis pin-pointed basic causes:

Too much grain planted on hillsides. Too much red and alsike clover giving little more than one crop in 2 years. Not enough permanent legumes. A highly acid soil and lack of farmer understanding of the true value of lime. Control of gully erosion, already done, was not enough.

Low net income kept farmers from starting any program on their own. They needed financial, technical, and educational assistance. Agricultural services had not previously "geared-in" with a united approach.

The solution involved a 10-year job of replacing short-lived clovers with alfalfa and birdsfoot trefoil as the key conservation measure.

Steuben County's agricultural leaders (farmers on committees, Vo-ag teachers, bankers' representatives, and all agricultural workers) pooled facts, studied extension demonstration results in the county, and agreed to adopt a united approach.

Agricultural agencies and local leaders started "gearing-in." For almost 2 years they held educational meetings and demonstrations to explain problems, conservation needs, and methods of getting at them.

The local Agricultural Conservation Program was redirected to emphasize the establishment and improvement of desirable permanent grass and legume cover and water management and control. Down-the-road sign-up methods gave way to "community sittings" where conservation needs and practices available through ACP cost-sharing were explained.

ACP practices and cost-sharing enabled Steuben County farmers to hit their conservation farming stride in 1956, several years ahead of schedule. In 1956, alone, on the 883 farms participating, average net cost-share assistance of $290 per farm helped operators establish 7,900 acres of permanent grass and legume seedings and over 700 acres of contour stripping, apply 26,800 tons of lime required by soil test for vegetative cover, plant trees on 755 acres, improve 1,470 acres of permanent and desirable legume and grass cover, put in 27,000 linear feet of diversion ditches and terraces, and many units of other practices. By the end of 1956 the acreage of birdsfoot trefoil and alfalfa was more than six times that of 1950. The soil for the most part now stays put.

The 1956 Agricultural Conservation Program helped solve many local conservation problems of a similar nature throughout the United States. Agricultural Stabilization and Conservation county committees, each including three farmers and the Extension agent, tailored their ACP to local conservation needs. This flexibility of the ACP for local adaptation was particularly advantageous in counties with special problems or when emergencies arose.

In all agricultural counties, the ACP helped bring farmers and ranchers technical assistance, conservation materials and services, and information about local problems, new methods of conservation farming and alternate uses of farmland. These were furnished through the Agricultural Stabilization and Conservation committees, by arrangement with Soil Conservation Service, Forest Service, Extension Service, experiment stations, or in cooperation with other agencies and private businesses.

Such services fulfilled the main purpose of the ACP: To furnish financial assistance to farmers and ranchers unable, entirely on their own, to take the conservation steps

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their farms needed. Assistance was on a share-the-cost basis. ACP furnished nationally about half the cost; participating farmers and ranchers provided the remainder in cash, labor, materials, and use of equipment.

While the ACP continued to emphasize practices that give longtime benefits it did not exclude other needed practices. The program gave added emphasis to encouraging farmers to follow balanced conservation measures which contribute to sound systems of conservation farming, give more enduring protection to agricultural resources and improve productive capacity. For example, water management practices on farms were established in many States at a much faster rate than before.

Many ACP practices were used effectively in restoring farmland damaged by hurricane and flood and in emergency control of wind erosion. Emergency funds, making possible substantial programs of emergency conservation work to help farmers solve new conservation problems created by natural disasters, supplemented the regular ACP in 17 States.

During the past four complete program years, an average of 1,365,000 farms per year, with 37 percent of the Nation's total farmland, established conservation with ACP cost-sharing. Among their total 4-year conservation accomplishments, farmers:

Planted or improved 56 million acres of conserving vegetative cover and planted 545,000 acres of trees and shrubs.

Established 7 million acres of contour stripcropping, terracing, and other forms of contour farming to better manage and conserve soil and water.

Established 7 billion square feet of sod waterways to dispose of water without erosion.

Constructed 268,000 new storage type dams and ponds to control erosion, conserve runoff, and permit proper grazing land management.

Drained 5.5 million acres of farmland to dispose of excess water to permit conservation farming.

Applied 62.8 million tons of standard ground limestone equivalent to permit growth of conservation cover for soil protection and erosion control.

Improved the cover on range and pasture land to control erosion by controlling competitive plants on 6 million acres.

SOIL CONSERVATION SERVICE

During the past 16 years Mr. O. A., Lincoln County, S. Dak., has installed 15 vegetative and engineering conservation practices on his 240-acre farm. In so doing he has stepped up his efficiency of operations about 75 percent, has checked erosion, and greatly increased his net farm income.

Mr. A. first became interested in soil and water conservation in 1939 when a CCC camp was located in an adjoining county. When local farmers organized the Lincoln County Soil Conservation District in 1941, he became one of its first cooperators.

At the request of the local district board, soil scientists of the Soil Conservation Service made a soil survey and land capability map of his 240-acre farm. SCS technicians then helped Mr. A. develop a long-range conservation plan for his farm. They advised him about the best conservation crop rotations, laid out contour lines for stripcropping, and helped him plan and design a water-disposal system. Later

the technicians laid out the terrace system, helped Mr. A. select sites for farm ponds and furnished designs for their construction.

In the meantime, Mr. A. practiced stubble mulch tillage, improved his pastures by reseeding and fertilizing, and adopted a recommended system of livestock production and grazing management that helped conserve the soil and increase farm income.

Having watched the effectiveness of conservation methods on his own and other farms, Mr. A. recently helped his neighbors organize a watershed association. The main purpose is to get complete watershed treatment that will check flooding on bottom-land fields that cannot be controlled by conservation practices on one farm alone.

L. Z., who operates an 85-acre dairy farm south of Albuquerque, N. Mex., was faced with the problem of getting greater efficiency in the use of his limited amount of irrigation water. He became one of the first cooperators with the Tijeras Soil Conservation District organized in 1945. SCS technicians made a soil survey of his farm and helped him devise an irrigation system based on land capabilities. He changed field boundaries and leveled all fields for most efficient application of water. He lined his irrigation ditches with concrete to further conserve the limited supply of water. His main crops are irrigated pastures of grass and legumes and corn and sorgo for silage. From his 85 acres he now produces all the pasture and silage and a part of the hay for a herd of 80 milk cows and 50 heifers.

These two men are among more than 1.7 million farmers and ranchers now cooperating with their local soil conservation districts and receiving technical aid from the Soil Conservation Service. These conservation farmers are not only conserving and improving the soil from which the Nation must subsist, they are also helping "drought proof" the land by preventing runoff and storing more water in the soil.

When the spring rains of 1957 broke a 5- to 7-year drought in central and western Texas, tests showed that conservation farming put water into the "moisture bank" of the soil much more rapidly than did traditional methods. Where good conservation practices were used water penetrated about twice as deep into the soil as it did on fields and ranges where there was no conservation treatment. Soil moisture thus stored can mean the difference between good crops and crop failure in areas where rainfall normally is scarce. Furthermore, the decreased runoff often prevents ravaging floods on the bottomlands below.

During fiscal year 1957, the Soil Conservation Service provided technical aid and other assistance to 2,751 soil conservation districts in all of the States and Territories. More than 1,700,000 farmers and ranchers were cooperating with these districts.

Soil surveys were made on about 34.8 million acres of farmland, and range-site surveys on 13 million acres. The SCS assisted 92,660 farmers and ranchers develop basic conservation plans on 27.6 million acres during the year. These plans and others prepared in previous years now include 326 million acres. The Service in 1957 also assisted with the revision of 11,065 farm and ranch conservation plans that included more than 4.7 million acres.

In addition, the SCS provided technical assistance on 2,398 group drainage jobs and 1,079 group irri-

gation jobs affecting 5.0 million acres.

In cooperation with other Federal and State agencies the SCS obtained accurate snow pack information on about 1,240 snow courses in the Western States during the winter and early spring of 1957. Information obtained from British Columbia on the snow pack of the upper Columbia River watershed was made available to farmers and other interested people as a part of the spring runoff prediction. This helped irrigation farmers plan their cropping systems and also informed all citizens of the area regarding the possibility of floods and probable water supplies during 1957.

The application of soil and water conservation practices with technical help provided by SCS continued at a high rate in 1957. Some of the more commonly used practices applied by cooperating farmers and ranchers during the year included:

Contour farming—2,660,000 acres.
Conservation crop rotations—7,200,000 acres.
Pasture planting—2,834,000 acres.
Deferred grazing—15,008,000 acres.
Improvement cutting—994,000 acres.
Tree planting—472,000 acres.
Windbreak planting—1,965 miles.
Wildlife area improvement—426,500 acres.
Terracing—51,000 miles.
Pond construction—81,000 ponds.
Sprinkler irrigation systems—5,100 systems.

Another important phase of SCS assistance to farmers and ranchers cooperating with soil conservation districts has been the planned adjustments in land use so that all land is used within its capabilities. During the past 5 years, as a result of such conservation planning, a net total of about 1 million acres each year has been retired from cultivation and planted to grass or trees.

Watershed Protection and Flood Prevention

Green Creek is a tributary of the Bosque River in Erath County, Tex. Its watershed covers about 105 square miles. During a 20-year period this creek had 12 major floods and 75 smaller ones, with an average flood damage of more than $45,000 per year. This watershed was selected in 1953 as one of the pilot watersheds to be used as demonstration areas by the Department of Agriculture. The local sponsor of the project is the Upper Leon Soil Conservation District. Departmental obligations are carried out by the Soil Conservation Service.

The estimated cost for land treatment and structural work in the watershed was $1,775,000, of which about $1,095,000 was to be borne by the Federal Government. The remainder of the cost will be borne by local organizations and farmers of the watershed. Easements and rights-of-way having an estimated cost of $65,000 were donated by landowners of the watershed during the 6 months after the project was started.

By January 1, 1957, all of the 13 floodwater retarding structures planned for the watershed had been completed. More than 290 farmers, controlling about 95 percent of the agricultural land, had developed complete conservation plans in cooperation with the local district. They had installed more than 50 percent of all planned conservation measures, and doubtless would have installed more except for the severe drought that prevailed from 1953 through 1956.

A severe rainstorm in April 1957 covered this watershed with almost 4 inches of water in a few hours. The floodwater retarding structures and the land-treatment measures reduced the flood damages from this rain from an estimated $45,000 to approximately $7,000. In addition, crops and pastures in the watershed benefited greatly from the water held on the land as a result of conservation practices.

The watershed protection and flood prevention work on Green Creek is somewhat similar to that being done in 100 small watersheds and 275 subwatersheds of 11 large watersheds of the Nation.

Torrential rains occurring in central Texas and Oklahoma in the spring of 1957 proved the value of this work. Protected watersheds, like Green Creek, had little flood damage. Similar streams nearby, without watershed protection work, produced devastating floods.

One hundred and thirty-eight upstream dams combined with land-treatment measures in the Upper Trinity watershed of Texas prevented estimated damages of more than $1 million to crops, pastures, livestock, homes, buildings, roads, bridges, and utilities during the floods of May 1957. The savings were mainly on valley bottoms in tributary watersheds of the Trinity. The dams, which supplemented soil and water conservation practices on the land, temporarily held about 122,000 acre-feet of floodwater and trapped 3,000 acre-feet of sediment that otherwise would have moved downstream to heighten flood crests and clog downstream channels and reservoirs.[1]

The installation of structural measures along with needed land treatment continued in 58 pilot watershed projects comprising more than 3 million acres. Structural work completed during the year included: 68 floodwater retarding structures which hold back about 37,330 acre-feet of water; 91 stabilizing and sediment-control structures; 54 miles of channel stabilization and improvement; and 34 miles of roadside erosion control work. Farmers and ranchers planted grasses and legumes on about 3,500 acres which were dumping critical amounts of silt into waterways and onto lower lands and planted 507 acres to woody plants. Other needed land-treatment measures within these pilot watersheds were applied by cooperating farmers and ranchers with increasing speed.

In addition to this pilot project work, local organizations on small watersheds had submitted 712 applications for assistance under the provisions of Public Law 566, the Watershed Protection and Flood Prevention Act of 1954. The applications cover watersheds totaling about 56 million acres.

Two hundred and sixty-eight watersheds comprising more than 20 million acres have been authorized for planning assistance by Soil Conservation Service technicians. Watershed work plans have been prepared in 42 of the projects which now are authorized for construction operations under Public Law 566. These projects will receive Federal financial and technical assistance with the installation of needed works of improvement.

Flood-prevention work continued in the 11 authorized watersheds (Act of 1944) covering more than 30 million acres. The needed structural and land-treatment measures have been planned for 150 subwatersheds. Other subwatershed work plans are in process of preparation where there is local interest and support. Some of the flood-prevention works of improvement installed during the year include: 73 floodwater retarding structures comprising more than 52,700 acre-feet; 1,319 stabilizing and sediment control structures; 305 acres of grassed waterways; 141 miles of channel stabilization and improvement; and 467 miles of roadside erosion control. Revegetation was

[1] An acre-foot is enough to cover 1 acre with 1 foot of water or sediment.

completed with grasses and legumes on 15,600 acres and with woody plants on 21,800 acres. The scheduled farmland treatments were also applied at increased speed during the year.

Assistance With ACP Work

Technicians of the Soil Conservation Service continued to assist Agricultural Conservation Program participants with permanent-type practices on which cost-sharing was requested. Certifications for need or practicability, assistance with site selection and layout, supervision of installation, and certification of compliance with specifications were provided on 400,682 farms and ranches whose operators were participating in this program. Such assistance was given on the permanent-type practices which will provide enduring conservation benefits to the land as specified in the national ACP bulletin.

Great Plains Conservation Program

The program development phase of the long-term conservation program for the Great Plains, as authorized by Public Law 1021 in 1956, was completed during the past year. The Soil Conservation Service has been designated as the Department agency to take the lead in administering this program.

The problem in the Great Plains area is a long-standing one which farmers and ranchers and local, State, and Federal agencies have been attempting to solve for several decades. Torrential rains over a part of the area in the spring of 1957 gave farmers and ranchers a "breather" in some localities. Many other districts are still in the grip of the drought. Devastating floods and serious erosion caused by the rains emphasize the importance of applying soil and water conservation measures as a basic part of the program to stabilize agriculture and the business life of the region.

The program authorized by Public Law 1021 will further help farmers and ranchers of the region install soil and water conservation measures and make the land use adjustments needed to achieve a more stable agriculture. It provides for cost-sharing and technical assistance to farmers and ranchers in designated counties with acute wind erosion problems.

This program went into operation in the late summer of 1957. Its effectiveness will depend largely on the degree of voluntary participation by farmers and ranchers of the region. This, in turn, calls for a high degree of cooperation and teamwork between the several Federal and State agencies that have a part in it.

Other Programs

The Soil Conservation Service also provided technical assistance to 15,330 Soil Bank participants. This help included general counseling with farmers and ranchers about the Acreage Reserve and Conservation Reserve phases of the program. SCS technicians gave direct assistance to participating farmers and ranchers in selecting lands to be placed under contract and installing needed treatments for long-time protection.

Progress was made in the national inventory of soil and water conservation needs being undertaken by various departmental agencies under SCS leadership. Policies and procedures were refined and approved by the Bureau of the Budget. State and county committees were formed and surveys were started to obtain accurate sample data for the inventory.

The Soil Conservation Service continued to provide technical as-

sistance on conservation work for the Rural Development Program that is designed to help low-income farmers and ranchers in designated counties. It made recommendations and gave technical assistance to farmers who obtained soil and water conservation loans from the Farmers Home Administration.

Work on the water utilization program, administered by SCS under the Case-Wheeler Act, was nearing completion at the end of the year. All projects except that at Eden Valley, Wyo., had been completed. This project is scheduled for completion by 1962.

The Soil Conservation Service provided technical assistance and consultation on soil and water conservation problems to various Federal and State agencies concerned with these matters. Cooperation was continued with the Army Engineers and Bureau of Reclamation on river basin investigations.

FOREST SERVICE

The people of the Coosa Pines, Ala., community have another source of employment in a new cold soda pulp mill. Area woodland owners can now sell low-value scrub oak and gum trees that never before had market value. A cold soda newsprint plant in Calhoun, Tenn., is giving that community the same kind of economic lift.

Developed by the Forest Service's Forest Products Laboratory, the cold soda pulping process promises a use and market for America's abundant hardwoods. Owners previously could not sell these trees because they were below sawtimber size and quality.

The process is not limited to newsprint. A paper company in Lyon Falls, N. Y., is using it to pulp birch, maple, and beech in the production of quality printing paper.

While research continues on the process, advantages are already obvious. Because it works at ordinary room temperatures, equipment costs are less. Because it uses more kinds of trees, it appears to have low-cost, high-yield potential that will hasten the use of hardwood in fiber products.

More rural communities will have new job opportunities and added income. Our paper supply will be enlarged. The forest owner will sell his scrub hardwoods, and by removing them make room for better timber to grow.

Research

Forestry research covers a broad field: Protection and management of forests, related rangelands, and watersheds; utilization of forest products, and the economic aspects of forestry. The work is carried on at nine regional experiment stations, a research center in Alaska, a tropical research center in Puerto Rico, and the central Forest Products Laboratory at Madison, Wis. The following are typical examples of research results.

Where water is scarce and expensive, more uniform forage use can be obtained by hauling water to livestock. This reduces trailing damage to vegetation and soil and permits grazing at the most appropriate times. A rancher in southern Utah increased his lamb crop from 80 to 110 percent and weaning weights from 60 to 72 pounds by hauling water to his sheep instead of trailing the flock to water. Costs for hauling water about 10 miles average between $1 and $1.39 per cow-month and from 10 to 15 cents per sheep-month.

Techniques were found to control the European pine sawfly with

virus sprays applied by airplane. The virus is obtained from virus-killed caterpillars. A tablespoon of the solution mixed with enough water is sufficient for spraying an acre of pine trees. A virus of the Virginia pine sawfly can also be applied by spray.

Forest Service scientists have located a number of trees that seem to resist the deadly chestnut blight. During fiscal 1957 scion wood from 28 of these rugged survivors was grafted to other rootstock for further study of their resistance.

Sanitation is an effective method of controlling oak wilt. In the Southeast, sanitation reduced new infections the following year by 75 percent in one area and by 67 percent in another area.

Timber growers in the South can make better use of available water by judiciously thinning and removing cull trees and undesirable brush. It takes an estimated 750,000 gallons of water to grow 1 cord of pulpwood in the mid-South. The average acre of pine timberland transpires and evaporates about 30 acre-inches of soil water per growing season. Summer rainfall normally supplies about half this amount, with water stored in the soil making up the difference. Removing undesirable trees provides more water for crop trees and results in better growth.

Research in preventing lightning-caused forest fires looks promising. Project Skyfire tests in Arizona and Montana showed that cloud seeding could keep some growing clouds from developing to the lightning stage. A mobile radar test unit demonstrated that it could locate and track thunderstorms, enabling fire fighters to prepare for fires and get to them quicker.

As related by a USDA forester, here is how research with air tankers and sodium calcium borate paid off on the Cornwell fire, Cleveland National Forest, in California:

Roy Davis shoved the tractor in reverse and backed out of the smoke. It looked like a hopeless job now. The wall of fire had crossed the main ridge and through the heavy chamise brush and was roaring downhill out of reach. Roy kicked the cat into gear and tried to pick up the slopover. But smoke and heat forced him back. As he wiped sweat and dust out of his eyes, he thought: "Well, here we go again! Guess I'll have to send word to the wife that I won't be home for a couple of days. Two years ago when I fought fire near Elsinore, we were stuck for a week."

Then he heard the roar of a single-engine plane. Looking up he saw a cloud of white liquid falling from the bottom of a hedge-hopping ship. A second ship dropped a load in the brush just ahead of the fire, cooling the flames. Seizing this chance, Davis pushed his big cat in along the edge of the fire and began picking up the slopover.

Meanwhile, five more air tankers dropped their 100-gallon loads of fire retardant chemical. Roy Davis finished widening the cat line around the breakover and smiled through a speckled mask of dust and borate. "That's teamwork! Guess I'll be home tonight after all."

The Forest Service's analyses of timber supplies and demands provide a basis for forestry and conservation planning by public and private interests. During fiscal 1957, 10 million acres were inventoried for the first time in seven States and Alaska. Of the 648 million acres of forest land in the continental United States, only 138 million acres, largely in the Rocky Mountain States plus a small area

in Maine, remain to be covered. In Alaska about 4 million of 136 million acres have been surveyed.

In the past 10 years 276 million acres have been resurveyed, including 28 million in Oregon, Washington, Montana, Michigan, Wisconsin, Oklahoma, Mississippi, New Hampshire, and Virginia during fiscal 1957.

The first complete survey of Massachusetts showed that this densely populated State is nearly two-thirds forested, and that present timber cut is only about one-third of annual growth.

A durable wood finish that retains the natural beauty of wood siding and trim was developed by the Forest Products Laboratory. Essentially a modified stain, the finish can be made by the homeowner in a variety of red and brown colors especially suited to western redcedar and redwood siding. Test results indicate that it will last 4 years or more, about the same as a good paint job.

The growing charcoal market is of particular interest because charcoal is made of waste wood. The Forest Products Laboratory developed a low-cost kiln suitable for small timber owners and sawmill operators. To meet the market demand, established plants expanded and many small producers entered the field. Besides the market for wastewood, this use of sawmill residue and material from cutover woodlands shows promise as a forest management tool.

Launching of the U. S. S. *Bittern* by the Navy—the first ship to use laminated wood for frames and keel—was a triumph in wood technology. Tests on production samples of laminated frames were made at the Forest Products Laboratory. Forest Service scientists were consulted about construction problems on the vessel, and the Navy lauded the Laboratory for its part in the project.

Cooperative Work With States

A school teacher in the South was offered $3,000 for a 50-acre tract of oak timber which the prospective buyer said would yield about 150,000 board-feet. The owner consulted a State service forester who analyzed the tract and prepared a 10-year management plan. The tract was found to contain 500,000 board-feet of timber.

The forester recommended selling 100,000 board-feet at once, and 68,000 every 5 years thereafter. Marked and put up for competitive bidding, the 100,000 board-feet brought $30 a thousand, or $3,000—exactly the amount originally offered for the whole tract. Under the forester's guidance, 82 cords of pulpwood were marked and cut, bringing $266.50 extra.

Good forestry enabled this owner to sell his timber and have it too. He had more cash income from a selective cutting than he had expected from all of it; he still has a productive forest with its other assets and the prospect of steady cash income for the future.

Farmers and other small woodland owners have possession of over half the Nation's forest land. Generally, these lands are neglected. More intensive cooperative work is essential to get them under better management. Here is the best hope for our future timber supply, a supplemental income for farmers, and a thriving forest industry.

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Kansas, Nebraska, and Nevada entered the cooperative forest management program in fiscal 1957, bringing the total to 1,400 counties in 44 States and Puerto Rico, in which farmers and other small owners received technical help. About 1,000 counties with small woodlands are still without this service.

The number of "service" or "farm" foresters increased from 285 in fiscal 1956 to 314 in fiscal 1957. The Federal Government's share in this cooperative endeavor was increased from $571,600 for 1956 to $866,053 in 1957.

The Forest Service continued to provide technical management help to other Federal, State, community, and private agencies, forest industries, colleges, forest consultants, and landowners.

Flood-prevention work was done on 6 of 11 authorized watersheds, under the Flood Control Act of 1944. The watersheds involved were the Coosa in Georgia; Little Tallahatchie and Yazoo in Mississippi; Los Angeles and Santa Ynez, California; the Potomac in Maryland, Pennsylvania, Virginia, and West Virginia.

Under the 1950 Flood Control Act, emergency flood-prevention treatment was approved during 1957 for 83,000 acres burned off in five fires. Help was given on 54 of the 98 watershed applications approved in fiscal 1957 by the Soil Conservation Service for planning assistance. In cooperation with SCS and State agencies, flood-prevention measures were installed on 36 projects and 950 woodland owners were helped to improve their forestry practices.

The cooperative fire-control program had 390 million acres of State and private lands under organized protection, an increase of nearly 3 million acres over the previous year. The total public and private lands under organized protection rose to 607,032,000 acres. Plans were made for Nebraska and Wyoming to enter the program. About 41 million acres of State and private lands remain in need of organized fire protection.

Unprotected lands in calendar year 1956 had a burn rate 27 times greater than those under protection.

The number of forest fires—including those on public and private lands—hit a record low during calendar year 1956, despite greater use of these lands than ever before. An overall total of 143,485 fires were reported—a reduction of 1,695 over 1955.

The program to furnish tree planting stock to private landowners, under the Clarke-McNary Act, advanced at a record rate. Output for fiscal 1957 was about 712 million trees, more than double the 1951 figure. This has resulted from an enormous expansion in State nurseries, especially in the South.

The Forest Service was assigned technical forestry responsibilities for tree planting under the Conservation Reserve of the Soil Bank. Through April 15, 1957, the close of the 1957 signup period, approximately 536,000 acres were placed under Conservation Reserve contract to be planted to trees.

Soil Bank funds were made available to cooperating States during the year. The States produced or bought trees and also provided technical forestry help. Other States furnished planting stock and services through regular State programs.

Efforts were intensified to reduce timber losses from forest insects and disease. Insecticide was applied by aerial spray to 1.5 million acres of timber in Montana and Idaho to control the spruce budworm. Some 257,000 trees infested with bark

beetles were effectively treated on 2.5 million acres of forest lands.

Cooperative agreements were made with 11 States for forest insect control projects on State and private lands, with Federal Pest Control funds contributing about 25 percent of the cost.

Cooperative control projects in five States successfully prevented the oak wilt disease from spreading, and reduced damage to State and private forest resources. Extensive aerial surveys were made to detect new and existing infestations.

Work continued on controlling blister rust disease on white pine. In cooperation with States, private owners, local forest protective associations and others, many million ribes, the alternate host for the disease, were destroyed. A forest genetics project was started with the University of Idaho aimed at eventual production of western white pine planting stock that will resist blister rust infection.

The National Forests

The Targhee National Forest in southeastern Idaho and western Wyoming, forming a great timbered semicircle around the head of the mighty Snake River, illustrates how multiple-use management brings the highest benefits to the most people year in and year out.

Here are 1,650,300 acres of valuable public land. Its renewable resources—water, wildlife, forage, timber, and recreation—help sustain numerous communities in 10 counties.

From its mountain ranges along the Continental Divide come 2,500,000 acre-feet of water each year, helping to irrigate crops in the upper Snake River Valley that bring farmers over $85 million annually. People of the area harvest 16 million board-feet of timber. Some 153,000 fishermen from all over the country are attracted to its 516 miles of streams and 14,465 acres of lakes and reservoirs. Hunters take about 3,000 big game animals—elk, moose, deer, bear, and mountain sheep—from the forest yearly. During the summer over 14,000 cattle and 118,000 sheep graze the lands. And 2 million recreation visits a year attest to its scenic attractions.

To keep these varied resources productive for public benefit is the job of 8 district rangers, working under the forest supervisor. They integrate the uses; plan, manage, and protect the forest, so that its abundance may serve us now as well as in the future.

That is a bird's-eye view of multiple-use management in action on only one of the 149 national forests. Some detailed activities for the year are described below.

Protecting watersheds on national forests has been one of the main functions of the Forest Service since its beginning over 50 years ago. With today's rising water demands, and shortages in some areas, it assumes even more importance. Special watershed improvements were extended to 55 projects on 43 national forests, compared to work on 30 in 1956.

A pilot study to find out how forest and range cover may be managed to increase streamflow continued on the Beaver Creek watershed in the Coconino National Forest in Arizona. In the Piedmont of the Southeast, methods were developed—combining bulldozing, drainage, and revegetation— to stabilize large gullies and quickly control severely eroded slopes.

Volume and value of national forest timber cut in fiscal 1957 again reached a new high—7.0 billion

board-feet, valued at $115,567,029. At Sitka in southeastern Alaska, engineers were staking out the site for a new pulp mill to harvest a sale of 5¼ billion board-feet of timber, the fourth largest sale by the Forest Service in the Territory.

Reforestation or timber stand improvement was applied to slightly more than 1 million acres of national forest lands.

Twelve Forest Service nurseries produced and distributed 106,134,000 seedlings and transplants.

Use of national forest lands and waters for power developments has grown steadily in recent years. At the end of fiscal 1957, there were 277 Federal Power Commission licenses in effect for waterpower plants and transmission facilities. Another 126 transmission line projects were covered by additional Federal Power Commission licenses.

The American people continued to turn to the national forests for recreation in ever-increasing numbers, as they have done since 1946. During calendar year 1956 there were 52.5 million visits, an upsurge of 15 percent over 1955, and nearly triple the total of 1946. About one-fourth of these visits were primarily for hunting and fishing.

A good start was made on Operation Outdoors, the 5-year plan to take care of the present recreation load and meet demands of an expected 66 million annual visits by 1962. This program, for which Congress appropriated $8,770,000 for fiscal year 1958, plans for adequate sanitation facilities, cleanup, maintenance, and rehabilitation of existing areas and establishment of necessary new areas.

A plan was prepared and a special-use permit issued to the State of California for the 1960 winter Olympic site at Squaw Valley on the Tahoe National Forest.

A significant event in national forest wildlife management during the year was the meeting in Washington between the Service and representatives of the State Game and Fish Departments. As a result of the meeting, guidelines for better wildlife management were formulated.

Progress was made in preserving wilderness. Two new wild areas (Diamond Peak and Mount Washington, Oreg.) were established; four primitive areas (Hoover, Calif.; White Mountain, N. Mex.; Three Sisters, Oreg.; and West Elk, Colo.) were reclassified as wilderness or wild area. In addition, one new wilderness area (Tracy Arm-Ford's Terror, Alaska) and one new wild area (Jarbidge, Nev.) were advertised for establishment, and one large proposed wilderness area (Glacier Peak, Wash.) is being discussed at a local level. As of March 1, 1957, there were 81 wild, wilderness, and primitive and roadless areas in 12 States, totaling 13,860,381 acres.

Demand for special uses of national forest lands, such as resorts, stores, telephone rights-of-way, pipelines, TV sites, mineral leases, summer homes, and organization camps, continued a gradual upswing. The scope of term permit authority was enlarged by the act of July 28, 1956, which amended the act of March 4, 1915, making it possible to better meet the growing demand. Under the new law, term permits may be issued for 30 years and cover up to 80 acres for a wide diversity of special uses.

Under the Multiple-Use Mining Act of July 23, 1955, work in determining surface rights reached full-scale proportions in all western regions, and was started on two national forests in Arkansas. Field examinations to determine surface rights on mining claims were com-

pleted on 102 areas, totaling 10,023,000 acres.

Indications are that the estimate of 200,000 mining claims in existence in 1955 was less than half the actual number. Benefits to resource management from this source will be greater than expected.

Through cooperative management on 65,886,278 acres of national forest range, 1,103,439 cattle and horses and 2,731,838 sheep and goats grazed during the year. Permits totaled 24,424 and grazing receipts came to about $2,682,350.

Great progress in fire control on the national forests was made through expanded use of aircraft and heavy ground machinery. Air tankers effectively dropped water and water-chemical mixtures on 23 fires in California. Helicopters successfully laid hose over rough terrain and also carried fire fighters and equipment to fires in many Western States.

Smokejumpers in California and the Pacific Northwest made 500 jumps to fight fires, an all-time record. A new smokejumper base, with 23 jumpers, was set up at Redding, Calif.

An experiment in using more standby fire fighters (a total of 600 men on 8 forests) resulted in decreased damage and lower costs. On the Mississippi National Forest where the test emphasized prevention, man-caused forest fires were reduced in 3 years from 747 to 367 annually.

Closer liaison on fire control was worked out with military agencies in a series of meetings on the west coast, following several serious fires that were caused by military plane crashes.

Increased interest developed in many parts of the country in the use of fire as a tool for forest management. In the Southern States where prescribed burning has been used successfully on many timber types for several years, the program was applied to new areas with marked success.

Administrative Management

The Forest Service Manual is being revised. Due by June 1958, the improved version should simplify paperwork and save many man-hours.

A student trainee program was set up at the Forest Products Laboratory and in several regions, to relate work-school experience and help fill the increasing requirements for trained personnel. On-the-job training was given 1,100 students employed during the summer. Servicewide seminars were conducted for personnel in program administration, personnel management, public relations, range and wildlife management, and other administrative functions.

As of June 30, 1957, there were 149 national forests comprising 180,777,318 acres in continental United States, Alaska, and Puerto Rico. Land utilization project lands, amounting to 6,945,157 acres, and 137,736 acres of other related lands brought the total to 187,860,211 acres of public lands being administered by the Forest Service.

Receipts from national forest lands, for timber sales, grazing land used and power, were $111,588,594; an additional $1,734,666 was collected from land utilization projects, for a total of $113,323,260. Generally 25 percent of gross income goes to States for road and school funds in counties with national forest lands; 10 percent is allotted for the building and maintenance of roads and trails in the national forests.

MARKETING AND FOREIGN AGRICULTURE

AGRICULTURAL MARKETING SERVICE

Food Distribution

In fiscal 1957 a total of 2,791 million pounds of "surplus" foods was moved into use through the Direct Distribution Program, a 40-percent gain over the previous year. Substantially larger quantities were donated, from foods acquired by the Department in price support and surplus removal operations, to recipients in both this and foreign countries. At home, the foods were distributed for use in school lunch programs, institutions, and by needy families. Abroad, foods went to needy persons in 88 countries, with actual commodity distribution being made by some 24 private United States welfare agencies. In addition to these regular distributions surplus foods helped meet needs arising out of such natural disasters as hurricanes and floods.

Merchandising drives were conducted during the year, through the Plentiful Foods Program, to gain cooperation of the food industry and information media in moving plentiful supplies of particular foods into consumption through regular trade channels. Special campaigns were conducted on turkeys, rice, cheese, canned sweet corn, eggs, lettuce, dairy products, stewing chickens, and strawberries. In addition, area offices of the Food Distribution Division conducted 23 local drives to help move commodities which were abundant in local marketing areas.

Concerted efforts of the New England food industry, supported by USDA marketing activities, climaxed an industry-Government drive to reduce burdensome supplies of canned sweet corn early in 1957. The campaign was highlighted by an industrywide "Canned Corn Buffet Dinner." Attractively prepared corn dishes, developed especially by Department home economists, were featured. The recipes also included pork and fishery products, since distributors for both products cooperated with tie-in advertising and sales promotion.

Stimulated by promotion and unique merchandising, retail sales of canned sweet corn in the six New England States increased by 33 to 50 percent during the campaign.

The National School Lunch Program, which helps make nourishing noontime meals available to children, continued to expand. The number of children taking part reached a peak of 10.8 million, of whom 10.6 million ate complete lunches with milk. As participation increased, the number and quality of the meals gained, too. Almost 1.8 billion complete meals were served, a gain of 13 percent over the previous year. The amount of food purchased in local markets by schools increased to $401 million, up 10 percent.

Through the Special Milk Program children drank 1,753 million half pints of milk for the year, a gain of 26 percent over the preceding year. During fiscal 1957 this program—which had been available only to schools—was extended to include all nonprofit summer camps and child-care institutions. By the end of the fiscal year, approximately 640 child-care institutions were taking part. During the summer season 2,220 summer camps participated.

From the superintendent of a home for children in Minnesota comes this statement:

"The National School Lunch and Special Milk Programs have been a tremendous help to us, as well as a pleasant experience. The children of our home have been exceptionally healthy this year, and I feel very definitely that this is due in part to their having good, substantial meals, and plenty of milk."

In some unusual cases, the School Lunch and Special Milk Programs were credited with spectacular results.

A northern New Mexico teacher tells of one of her pupils, an Indian boy, age 8, who had a body weight of only 50 pounds, and a generally weak constitution. After a few months of the wholesome diet provided through the School Lunch and Special Milk Programs, the boy was 9 pounds heavier and his general appearance had noticeably improved. Another 12-year-old boy gained 13 pounds in the same period. Their interest, alertness, and ability to get along socially also showed marked improvement.

In another instance, a serious skin infection among school children in New Mexico disappeared soon after milk and orange juice were provided through these programs.

Agricultural Economics

A 9-volume work—"Major Statistical Series of the U. S. Department of Agriculture—How They Are Constructed and Used"—of major significance to users of the many statistical series issued by the Department was completed and published during the year. It explains in detail what each series represents, what concepts and definitions are used, and how the data are obtained, tabulated, and analyzed.

More than a score of statisticians contributed to the handbook, issued by the Agricultural Marketing Service in cooperation with Agricultural Research Service, Farmer Cooperative Service, and Foreign Agricultural Service.

From the end of World War II until the present time the character of farmers' expenditures has undergone rapid change. Means formerly available for measuring the extent of change have proved inadequate. To correct this deficiency the Department, cooperating with the Bureau of the Census, made a survey of farmers' expenditures for farm living and production in 1955. During the past year this information has been assembled and made available for use.

A series of reports published during the year made available information obtained by the Department in a nationwide survey of household food consumption conducted in the spring of 1955. This survey constituted the most comprehensive examination of the food consumption of the population ever conducted in the United States. Its purpose was to obtain current information on patterns of food consumption, expenditures, dietary levels, and household food practices. The data are being described and analyzed in reports, articles, and speeches to assist officials administering agricultural programs and market researchers in food marketing firms and other private organizations.

A series of studies conducted in cooperation with State experiment stations, obtained information on industralization in rural areas, with special emphasis on the levels of living of rural people, their occupational adjustments, and the impact

on rural areas of the immigration of people and services associated with the establishment of new industrial plants. Studies of this type are well advanced in Mississippi and Louisiana and are under way in Ohio, Iowa, and Utah. The Mississippi and Louisiana studies indicate that new industries may be one solution to problems of unemployment and underemployment in low-income farm areas. The plants in both these study areas drew heavily on open-country residents for their unskilled laborers and were generally considered an economic boon to the communities.

Major economic influences that affect the demand for all milk, and for fluid milk and manufactured dairy products, were studied and the findings published in 1957. Other studies reported in the recent past examined the demand and price structure for wheat, selected vegetables, and for oats, barley, and sorghum grains. A similar study of feed-grain byproducts has been almost completed, and a report will be issued in 1958. These studies not only give the basis for appraising the outlook for farm products, but also provide information that is essential in estimating the probable economic effects of proposed new programs to support prices, to store surpluses, or to increase consumption at home or aboard.

Marketing Agreements and Orders

The Federal milk marketing order program continued to expand in 1957. Most significant was the enlargement of the Federal order area in New York and New Jersey. At the end of fiscal 1957, more than one-third of all milk sold to plants in the United States was being marketed under Federal marketing orders. Expansion of the program included issuance of three new orders covering the Chattanooga, Tenn.; Bluefield, W. Va.; and Platte Valley, Nebr., areas. Several orders were combined or merged during the year. In all, 68 marketing areas were being regulated by separate Federal orders. The orders provide for the establishment of minimum prices handlers are required to pay producers but do not fix prices for consumers.

"Since Milk Marketing Order No. 87 became effective in central Mississippi in November 1954, our milk producers no longer have to fear the devastating effects of price wars among milk handlers," says the secretary-manager of the Mississippi Milk Producers Association. "The order has provided for a mechanism of pricing producers' milk according to use classification. * * *

"In addition, the order specifies minimum class prices for producers' milk delivered to handlers, and provides for accurate butterfat tests."

Additional fruits and vegetables covered by marketing agreements and orders during the fiscal year included Washington sweet cherries and apricots, and Idaho-Malheur County, Oreg., onions. At the close of the year, 19 marketing agreement and order programs were in effect for fruits, 11 for vegetables, and 4 for tree nuts. Regulations limited the shipments of products covered by marketing agreement programs to specified grades, sizes, maturity, quality, volume, and types of containers. The market value of commodities covered by marketing agreements and orders on fruits, vegetables, and tree nuts was in excess of $850 million.

Acreage-Marketing Guides

Farmers made effective use of the acreage-marketing guides for vege-

tables in 1957. This was indicated by the response from producers participating in meetings with Federal, State, and trade officials, and by the large number of requests for additional information concerning the guides. The acreage-marketing guides help avoid the production of surpluses by providing growers with the best possible estimates of the acreages needed to meet market requirements for vegetables. Compliance by producers is voluntary. Few marketing difficulties have been encountered when growers have kept acreages within the levels recommended by the Department.

Regulatory Acts

Many investigations were made of alleged violations of the Packers and Stockyards Act. Orders of inquiry were issued, several cease and desist orders were put into effect, and registrations of some respondents were suspended. These activities were part of a continuing program to eliminate unfair, deceptive, and unjustly discriminatory practices that restrain or restrict competition or create monopolies at livestock markets.

A more vigorous enforcement program under the Perishable Agricultural Commodities Act was directed against misbranding or misrepresenting produce in interstate commerce. When misbranded produce was found at packing sheds, shippers were given an opportunity to regrade the commodities, obliterate the grade markings, or otherwise correct deficiencies. Shippers cooperated in practically all cases and a substantial reduction from previous years was recorded in the number of misbranding complaints. Plans were made to extend the program to incude produce at terminal markets.

More than 20,000 PAC Act licenses were renewed in 1957. At the end of the year approximately 26,000 licenses were in effect. Many reparation awards were made, and a number of licenses were suspended for cause. Amicable settlement of complaints involved the payment of more than $1,200,000 by respondents to complainants. Proposed revised regulations under the act as amended in 1957 also were developed for consideration by the fruit and vegetable industry.

More than 900 investigations of alleged violations of the Federal Seed Act were completed. In more than two-thirds of these cases warnings were issued. Criminal action was recommended in 20. In one case involving false labeling of the variety of 10 carloads of wheat seed, the United States attorney decided to prosecute for violation of the postal laws.

Market News Service

Improvements in the Federal-State Market News Service resulted in quicker and wider distribution of market news. This was achieved through increased use of radio, television, telegraph, and wire news services, while newspapers, trade and farm publications, direct mail reports and bulletin boards were relied upon to bring more detailed information to those who need it.

A new service on cotton was the inclusion in cotton quality reports of data on split grades. Linters' prices, formerly quoted and reported on the basis of grade only, were quoted and reported in the Weekly Cotton Linters Review by both grade and staple. Effective August 1, 1956, the base grade of cotton was changed from Middling $1\frac{5}{16}''$ to Middling $1''$ in market news reports.

The Dairy and Poultry Market News Service continued its adjust-

ments to keep pace with fast changing marketing processes. A new weekly review for eggs and poultry was initiated to provide greater and more timely information than the monthly report it replaced.

An Orchard Hill, Ga., broiler producer and operator of a grain elevator thinks the daily 12:15 p. m. market news broadcasts from an Atlanta station on broilers and other farm commodities so important that he arranges to hear it even when he's out of the office. He sets a tape recorder that turns on automatically about broadcast time and records the market news reports.

Other broiler producers frequently stop at this producer's office, when in Orchard Hill on business, to hear the noontime market reports or tape recording.

A seasonal market news service on pecans was inaugurated at Albany, Ga., in cooperation with Alabama, Florida, Georgia, Mississippi, and South Carolina. Reporting of fruit and vegetable truck receipts and rail arrivals was initiated in eight cities, bringing to 40 the number of cities covered by this service. A "Weekly Arrival Summary" was started from Washington, showing total weekly truck receipts and rail arrivals in 32 markets. An experimental market news project on potatoes was conducted from the Portland (Oreg.) Market News office during the active marketing season in central Oregon.

The Grain Market News Service continued to stress the importance of reporting prices and marketing data for local areas, especially in the rice area and in some of the southeastern States. Local or regional trading data were combined with information gathered at the large midwestern terminal markets. A Federal-State office was opened at Cleveland, Miss. This office also provides a current day service on grain. A leased wire circuit was opened in the southern rice area to speed up the exchange of market news regionally and nationally.

Market news on tobacco, as authorized by the Tobacco Inspection Act, was furnished to all auction markets and the tobacco trade. Reports were provided from two year-round offices at Raleigh, N. C., and Lexington, Ky., and from eight seasonal offices set up at centrally located points in the various tobacco producing belts. More than 1 million copies of various reports were processed and distributed to the public, about 80 percent of these being furnished directly to growers for use at the time their tobacco was offered for sale.

A Tift County, Ga., tobacco grower says, "I'd be at a loss for a guide in selling my tobacco if it wasn't for the grade and price bulletin on tobacco sales which USDA quickly prepares and daily places in the hands of growers and sellers at the sales warehouse. I've been selling my tobacco locally for 33 years, and the bulletin enables me to compare prices by grades on sales of the previous day. * * * To me, the Federal grading of tobacco also is a must service."

Federal market news service on livestock was initiated at Phoenix, Ariz., to cover range and feedlot sales of cattle and lambs throughout the State and in nearby areas. A special weekly western wool report was inaugurated at Denver, Colo., in conjunction with a wool research project. Daily carlot sales reports of beef and lamb were inaugurated at Chicago and New York. These reports, given nationwide dissemi-

nation in mid-afternoon, fill a need arising from the growth of chain-store merchandising. It is now estimated that fully 70 percent of the retail meat business in metropolitan New York is handled by chainstores. This trend is apparent in most large cities of the country. Since chainstores purchase beef and lamb in carload lots, this report is useful to producers and handlers nationwide. Through increased distribution of livestock market news reports, throughout the nation, by radio, TV, daily newspapers, and producer publications, it was possible to reduce by 10 percent the distribution of mailed reports.

Inspection, Grading, and Classing

Heavier demand for inspection, grading, and classing services during fiscal 1957 brought about increases in these services for most farm commodities. Such activities assist farmers and dealers in obtaining returns for their products commensurate with quality.

The quantity of grain inspected by licensed inspectors during fiscal 1957 exceeded that of the previous year by approximately 600 million bushels, and the total number of inspections was 5 percent greater than in fiscal 1956.

The volume of consumer packaged butter labeled with U. S. grade identification increased from 124 million to 138 million pounds, a gain of 11 percent. A grand total of 3,219 million pounds of dairy products was inspected and graded during the year—748 million pounds of butter, 1,090 million pounds of cheese, 1,290 million pounds of dry milk, 40 million pounds of evaporated milk, and 51 million pounds of miscellaneous dairy products.

Due largely to increased demand for graded meats, plus several large purchases by foreign governments under FAS purchase authorizations, poundage of meats federally graded and certified during the 1957 fiscal year exceeded that of 1956 by approximately 223 million pounds.

Although cotton production was about 1.4 million running bales smaller than in the previous year, the volume of classings by Federal classers was almost 21.2 million bales, compared with about 14.4 million in 1956. Of the total, 11.2 million samples, or about 85 percent of the total U. S. ginnings, were classed for the 551,077 farmer members of cotton improvement groups organized under the Smith-Doxey Act, the highest proportion of the crop so classed since the program began in the 1938–39 season.

Volume of fruit and vegetable inspections, both fresh and processed, increased in fiscal 1957 over 1956. Fresh inspection of 1.4 million carlots was record high and was due largely to a larger volume of inspection of raw products for processing. There was a 31.4 percent increase in inspection of dehydrated products; an 11.4 percent gain in inspections of canned fruits and vegetables; and a 7.5 percent rise in frozen product inspection.

As of June 30, 1957, inspection of poultry and poultry products was being provided to 324 plants and 239 applications were on file.

During the year 32 million cases of shell eggs were graded, about 6.4 million cases more than in fiscal 1956. The 1⅓ billion pounds of poultry graded represented an increase of 414 million pounds over 1956. Approximately 25 percent of the total poultry sold off farms was graded, including 54 percent of the turkeys and 17 percent of poultry other than turkeys.

Inspection service was maintained on all of the 177 established

tobacco auction markets, comprising 966 different warehouses. The volume of tobacco inspected totaled about 2,307 million pounds—100 percent of all tobacco sold at auction.

Nineteen accredited packers of turpentine now use Department supervised inspectors at their plants. The total quantity of turpentine packed in small containers under the inspection service was 3,723,498 gallons, an increase of 131,462 gallons.

Standardization

Broadening of markets at home and abroad created a need for new standards and for revision of many existing standards.

The rapidly increasing use of fiber testing in connection with marketing and processing cotton made necessary some provision for maintaining a standard level of test results for the tests now in extensive use. To meet this need the Department in cooperation with trade groups in this country and abroad organized the "International Cotton Calibration Standards Program." Since the program began in February 1957, the Cotton Division, which is charged with preparing and distributing the calibration standards, has sent out 531 sets to laboratories throughout the world, for use in calibrating cotton fiber testing instruments.

A new descriptive standard for Strict Good Middling upland cotton became effective August 1, 1957.

A number of minor changes were incorporated into tobacco standards during the fiscal year. A study of the chemical composition of U. S. grades of burley tobacco, in which 15 independent and State laboratories cooperated with the Department, was completed.

In connection with the development of new tentative standards, a study was made of the chemical composition of domestic aromatic tobacco.

The first official standards for grades of slaughter sows and sow carcasses became effective, and revised standards for carcass grades of lamb and mutton went into effect.

Standards for grades of veal and calf carcasses and slaughter vealers and calves were revised. The "Commercial" grade was renamed "Standard" to correspond to a previous change in the beef and cattle standards and other changes were made to clarify the standards.

The first major change in the standards for wheat in the past 23 years went into effect June 15, 1957. The revision had the effect of improving the quality of wheat represented by U. S. grades.

During the year, four new standards were made effective for fresh fruits and vegetables—those for southern peas, beet greens, cranberries (consumer standards), and Italian type tomatoes for processing. Preliminary work was completed on standards for avocados and fresh cranberries for processing. Nine fresh fruit and vegetable standards were revised.

For processed fruits and vegetables and related products, 3 new standards were issued and 18 were revised or amended. In addition, 3 new standards and 4 revisions were proposed.

A comprehensive revision of the quality standards for nonfat dry milk was prepared and discussed with the industry. An Interim Federal Specification for Cheese, Cheddar, Natural, was issued in August 1956.

The Naval Stores Branch collaborated with the General Serv-

ices Administration in the now-effective revision of Federal Specifications for Turpentine, Rosin, and Dipentene. The Federal specifications for rosin now include tall oil rosin.

Two revised publications were issued in connection with standards for poultry and poultry products. The Poultry Grading Manual, which serves as a guide in short courses or schools for poultry grades, was revised because of the rapid increase in the marketing of ready-to-cook poultry.

Wool sampling is expected to be improved as a result of the use of a pressure core subsampling machine. The machine will also provide an accurate, objective method for subsampling 1¼-inch core samples taken in the field.

Agricultural Estimates

The Agricultural Estimates Division is the source of the Nation's official estimates and statistics on crop and livestock production, parity prices, and prices received and paid by farmers, farmers' cash receipts from sales, and farm employment and wage rates.

A farmer in Minnesota says: "It is my opinion that farmers need to regulate their production to meet the demand for their products, in order to receive a fair and profitable return. Your agency has all the information and ability to inform the farmer where his business stands."

Another farmer states: "I commend you and thank you for the fine service being rendered to the public."

Still another user of these reports writes: "I am continually amazed at the accuracy you are able to achieve in such a major undertaking. This certainly speaks well for the sampling procedures utilized."

At the request of the Subcommittee on Agriculture Appropriations, House Appropriations Committee, the Division prepared a long-range plan for the further development and improvement of the agricultural estimating services. Mailed questionnaires used to collect basic data on prices received by farmers were redesigned for easier reporting.

Plans were completed for the 19th biennial survey of the Nation's refrigerated warehouse capacity, a subject of increasing importance in connection with the Department's defense planning program. A new pork statistics series has been provided, the first major change in meat items since the cold storage reporting service was initiated in 1914.

In December 1956 a special report on farmers' expenditures for items and services was issued by the Agricultural Marketing Service and the Bureau of the Census. This joint report casts new light on the kinds and quantities of items and services that should be included in the Parity Index.

The Soil Bank Program intensified the need for more reliable estimates of changes in farm numbers, total crop acres, and for county data on many items. Experimental work on objective measurements for improving formulas for forecasting yields of cotton, corn, wheat, and soybeans has continued with the objective of adapting the method to fit individual States.

Experimental June acreage and livestock surveys were extended to North Dakota, Montana, Wyoming, Colorado, and New Mexico, and the sample in the Southern States was increased to about 2.5 times the size used in 1956. A farm employ-

ment survey was combined with this survey in all States in 1957.

Information on soybeans and flaxseed stocks and on tall oil rosin production and stocks was published at quarterly intervals for the first time.

Potato estimates were put on a seasonal basis for the first time in all States, and the unit for potato yield and production was changed from bushels to hundredweights. The January 1 potato stocks report was augmented by similar reports as of December 1, February 1, and March 1.

A program of providing estimates for cut flowers and for nursery products was launched. Information was obtained from commercial growers in 5 selected States on 4 major kinds of cut flowers and on 7 kinds of nursery products.

Hatchery questionnaires were revised to provide a better breakdown between broiler and flock replacement chicks and an improved basis for estimating chicks raised on farms and prospective replacements for laying flocks. More detailed data on turkeys by classes were obtained and published.

With the addition of Nebraska, 10 States, accounting for nearly three-fourths of the Nation's total pig crop, are now cooperating with the Department in issuing the quarterly Pig Crop Report.

Quarterly reports provide current information on cattle on feed in 13 major feeding States. In April 1957, estimates by States of the number of head placed on feed and the number marketed during the preceding quarter were added to the report.

Monthly reports on estimated current production of ice milk and of cottage cheese were inaugurated. Data on the production of processed cheese and processed cheese foods were made available. Coverage of fluid milk price surveys was expanded by including five more markets.

Marketing Research

Substantial dollar savings in costs of marketing farm products are now flowing from the work of the Marketing Research Division of AMS, which conducted most of the nearly 600 marketing research projects under way in USDA in 1957.

Findings in the last few years from just a dozen such projects have an actual or potential value annually to the growers and marketing agencies that exceeds the cost in fiscal 1957 of all the marketing research undertaken directly by the USDA.

The grain industry estimates that grain aeration systems can save $1½ million a year, and add another $1 million of income a year through extra available storage space.

In one important area warehouse handling and storage charges for cotton have been reduced by 25 percent, a saving for that area of more than $2 million per season for handling and $300,000 per month for storage. Additional savings of $500,000 a year may come from research in storing and handling farmers' stock peanuts. Better quality and lower costs in other steps of marketing will be added dividends.

Improved markets for farm products built recently with planning and engineering assistance from AMS research are saving more than $600,000 a year at San Antonio, Tex., and over $500,000 a year at St. Louis, Mo. A wholesale food distribution center under construction in Philadelphia will reduce the costs of handling food by $6 million per year. Plans just released for relocating and rebuilding the wholesale fresh fruit and vegetable market in New York show how to reduce handling costs by an estimated $9 million annually.

A new method of loading watermelons in railroad cars will reduce transit damage by an estimated $500,000 per year.

Improved shipping procedures for tomatoes are already resulting in savings estimated at around $1 million a year.

The poultry industry will be able to save $1 million a year directly through an electronic blood spot detector developed by USDA and now being manufactured commercially; and consumers will get better eggs.

Industry representatives estimated in 1955 that apple houses of the Pacific Northwest were saving about $1 million per year through results of marketing research on handling methods and equipment. Since then these and other research results have been widely adopted in other parts of the country.

Northwestern-grown Golden Delicious apples no longer shrivel when packed in non-sealed liners. Increased returns may reach $100,000 a year.

The Northwestern pear industry gained at least $1 million, and consumers got a better product, from using polyethylene-lined boxes in 1956.

The Northwest sweet cherry crop can be marketed over a longer period, and shipped East by freight instead of express, in polyethylene-lined crates. Potential savings, $600,000 a year.

New shipping containers for fresh western plums, when generally adopted, will save the industry $1 million a year.

Research recommendations for icing of rail cars are saving the California date industry $30,000 to $40,000 a year.

During the 1957 fiscal year, some 53 studies of margins, costs, and efficiency in marketing were in progress; 11 of these studies were new. Eight reports were completed during the year. Particular emphasis has been placed on the cost of labor, the major part of the marketing bill, and the effect of changing technology on the use of labor and capital.

This information was used by the President's Conference on Technical and Distribution Research for the Benefit of Small Business, as well as by various Congressional groups in their work of formulating agricultural legislation. Three special reports on research in costs and margins were prepared for the Consumers Study Subcommittee of the House Committee on Agriculture.

Farm-to-retail price spread: A quarterly report, based on data from 80 distributors in the Central States, was started during 1957 on the sales and costs of milk distributors. The study shows that distributors' gross margins per 100 pounds of processed milk and cream rose from $4.61 in 1952 to $5.04 in 1956. The cost of 100 pounds of milk and cream rose during the same period from $4.09 to $4.68. Thus margins declined from 52 cents in 1952 to 36 cents in 1956. This is the first time that such information has been made available on a regular basis for an important part of the milk distribution industry.

Basic information about market trends: Continuing studies of overall marketing costs and trends have provided broader and more complete information about the rising costs involved in buying and selling farm products. These studies have been used in preparing several special reports requested by the House and Senate Committees on Agriculture and the Joint Economic Committee.

Surveys of consumer preference: Researchers conducted a nationwide survey among teen-age girls and some of their mothers to find out

what they did and did not like about cotton. Most respondents named ease in laundering as cotton's most attractive quality. Lightweight and coolness, fresh appearance, durability, versatility, variety, and inexpensiveness were other attractive qualities. The major criticism was that it wrinkles easily. Such research helps in gaging cotton's future and suggests that cotton can look to increasing markets in this area.

Potential markets for new products: Five weeks of experiments in retail stores indicated that the market potential for potato flakes was highly promising. These are a new form of dehydrated mashed potatoes developed by the Eastern Utilization Research Laboratory. Commercial firms are now exploring the possibilities of national distribution for potato flakes, which can be made satisfactorily from all types of white potatoes. At least five plants are now producing potato flakes for local distribution.

Determining maturity of fruits and vegetables: To determine maturity and to detect internal defects, marketing researchers have been measuring the amount of light transmitted through fruits and vegetables. Variations in light transmittance indicate changes in maturity that are important in determining when to harvest and ship fruit so that it will be of good quality when it reaches consumers.

Studies for protection against insect damage: Marketing researchers worked closely with Commodity Credit Corporation personnel to develop improved methods of controlling insects in stored grain. Improved methods have practically eliminated infestation in wheat stored in ships by CCC. Costs of protecting wheat from insects in the James River and Hudson River Reserve Fleets have been cut in half. Sprays applied in conjunction with fumigation last season appeared so effective that only sprays were used this year. Insect control has been considerably improved.

Paper, paper bag, and insecticide manufacturers and trade associations have cooperated in large-scale experiments to develop insect repellent packages. The search continues for a compound that can be used with the paper. Benefits from this research total millions of dollars annually.

Extending storage period for strawberry plants: Marketing researchers, cooperating with ARS, have almost doubled the storage life of strawberry plants by use of polyethylene. It costs less to pack in polyethylene, too. Many nurserymen have already adopted the poly-pack storage method.

New kinds of packing and packaging: Researchers found that vented cartons with perforated trays allow tray-packed apples to cool in half the time required for unventilated cartons—and the vented cartons give performance equal to that obtained in standard packs with wooden boxes. Other packaging tests were conducted with Bartlett pears, long white potatoes, Florida avocados, Washington sweet cherries, apricots, lettuce, tomatoes, cantaloups, poultry, and milk.

Clinics for industry groups: A number of clinics have been conducted in cooperation with industry to pass on the findings of marketing research designed to improve wholesaling and retailing operations. It is impossible to estimate the total usage of these research findings, but evidence obtained from the major firms indicates that savings resulting from their adoption run to several million dollars.

Federal-State Matched Funds

Marketing service work financed with matched funds was conducted during the year in 39 States and 3 Territories. This Federal-State program acquaints marketing agencies with research findings and helps them apply the findings to improve marketing practices. The work falls into four general fields: (1) Improving and maintaining the quality of agricultural commodities, (2) expanding outlets for agricultural commodities, (3) increasing efficiency and reducing costs of marketing operations, and (4) assembling and disseminating marketing information. The Agricultural Marketing Service helps the States plan and carry out projects in these fields.

Twenty States carried on programs of quality improvement for fruits and vegetables, 16 for poultry and eggs, 9 for dairy products, 9 for livestock and meats, and 8 for grain and seed. Quality improvement programs were conducted also on cotton, tobacco, and other commodities.

The North Carolina Department of Agriculture conducted an extensive campaign to improve the quality of eggs. Marketing specialists demonstrated proper egg grading and handling methods. Several groups of producers in the State, with an aggregate volume of about 6,000 cases per week, achieved a minimum of 80 percent Grade A quality in their wholesale pack. They obtained a steady outlet for their eggs at a price premium about 5 cents per dozen more than they would have realized through previously used marketing outlets.

In expanding outlets for agricultural products, activities were concentrated on (1) providing new and timely information to buyers on products in abundant supply; (2) organizing and assisting in promotional campaigns to stimulate consumption of surplus products; (3) helping producer groups and marketing agencies make their merchandising and promotional programs more effective; (4) making special surveys on changes needed to improve consumer acceptance of products; and (5) determining where and how additional market outlets can be established. The work in Maine is an example.

Expansion of markets activities were carried on by Maine for potatoes, broilers, eggs, dairy products, dry beans, maple sirup, and blueberries. In cooperation with the various industry groups, marketing specialists of the Maine Department of Agriculture planned and conducted promotional campaigns built around high standards of quality and product identification under the State of Maine Blue, White, and Red trademark. Promotional activities for Maine potatoes were carried on in 124 cities in 27 States. Specialists helped wholesalers and retailers plan promotions and improve display and other aspects of merchandising. They arranged for point of sale material supplied by the Maine Potato Commission, and furnished food editors, home economists, and consumer agents with information about Maine potatoes. These activities are credited with a vital role in the successful marketing of Maine's 1956 potato crop.

Firsthand assistance was provided to assemblers, packers, processors, wholesalers and retailers in applying research findings and advances in technology to marketing operations. The work in this field involved such products as poultry and eggs, dairy products, livestock and livestock products, tree fruits and nuts, vegetables, grain, hay, seed, cotton, tobacco, timber, and nursery stock.

Purdue University conducted a series of meetings and clinics with grain elevator and feed mill managers to present various ideas for improving efficiency. These were followed up by assistance to individual managers on specific problems. In one instance marketing specialists helped develop plans for building and equipping a combined elevator and feed mill which, although tripled in capacity, required less total labor than the replaced facilities. As the result of work with feed mills, showing the advantages of this system, the conversion to bulk handling of feeds was accelerated during the year.

New and timely marketing information was assembled and disseminated covering long-term trends in production, current production forecasts, the locations, volume, quality, marketing periods and prices of products in seasonal surplus, competitive situations in the markets, storage holdings, rate of movement to market and prices at country points. Activities in these fields of marketing information were conducted by 30 States, and were related to practically all agricultural commodities of commercial importance.

The development and issuance of a weekly plantings report for Florida tomatoes helped the tomato industry to adjust the rate of plantings to prospective market requirements. This type of report is expected to be of even greater service to the industry as experience is gained in its use as a tool for coordinating production with market needs.

COMMODITY EXCHANGE AUTHORITY

To the Commodity Exchange Authority came a letter from a Wisconsin onion grower who is opposed to trading in onion "futures." What onion growers want, he wrote, "is a fair chance to compete on a competitive market where the price of our onions is determined by the quality we are able to produce and not by the paper onions a few manipulators sell and buy."

In the opinion of most onion growers and farm leaders who have expressed themselves to the Commodity Exchange Authority, trading in Chicago onion futures adds to the onion industry's problems of recurrent overproduction and price uncertainty, and, as one onion farmer writes, should be abolished, "period."

Some onion growers are of contrary opinion. "* * * I have been raising and selling onions for 30 years," writes a Minnesota farmer, "and have seen disastrously low prices before there was any futures trading. * * * Hedging a part of my onion crop is the only form of support price which has ever been available to me. * * * During the past 5 years I would have suffered serious losses on onions if I had not sold several cars of them for future delivery at a time when the price was high enough to make onions a paying proposition."

The onion futures market of the Chicago Mercantile Exchange is a relative newcomer. It did not become important in onion pricing until the 1948–49 season. Since 1955, when the Congress voted onions under the Commodity Exchange Act, the futures operations on the Chicago market have been the subject of almost continuous investigation and study by the Commodity Exchange Authority.

Onions are produced in kitchen gardens in every State in the Union, but the bulk of the 40 million-sack commercial crop is grown

by a few thousand farmers who conduct specialized operations in a number of highly productive areas. These are widely scattered—from New York State's top-drawer producer, Orange County, within a geographical stone's throw of Manhattan's skyscrapers, to mountain-crested Malheur County in the Hell's Canyon section of eastern Oregon; and from the rich muck-soil area around the southern tip of Lake Michigan, to the Texas winter garden area along the Rio Grande.

The pricing and marketing of onions is complicated by sensitive seasonality factors and by perishability. Unlike grains and cotton which have good storing qualities well adapted to price projection and risk bearing in futures, the onion is a commodity of limited future. Spring and early summer onions must be marketed almost immediately after harvest. Late summer onions account for about 75 percent of total commercial production. Chicago futures trading is conducted in leading varieties of late summer onions, known commercially as Yellow Globes. Late summer onions are storable for fall and winter marketing needs; but the latter part of March or early April is the approximate point of no return. Unlike grain or cotton futures which have delivery months spaced fairly evenly around the year, deliveries on onion futures may be made only when supplies are available, and in practice all trading is conducted in the November, January, February, and March onion futures. Speculative attention tends to center on the March future. Supply uncertainties and rapid price movements in this future attract speculators looking for quick action, and in some instances large operators seeking price-manipulated profits. The March 1956 onion future, which reached a high of $2.75 per hundredweight in the summer of 1955, sold at 10 cents per hundredweight on March 15, 1956. In the delivery month of the March 1957 future the price ranged from a low of 84 cents to a high of $1.60.

Investigation of the March 1956 future by the Commodity Exchange Authority resulted in a formal complaint charging two large speculators and a corporation with depressing onion prices by arbitrary and manipulative operations in cash onions and onion futures. Investigation of the March 1957 future did not reveal evidence of price manipulation, but did show that feverish speculative activity accentuated price gyrations in the market. From the CEA investigation and studies it seems clear that the prevention of unwarranted price movements due to manipulation or excessive speculation in onions presents problems more difficult than in commodities with a less sensitive price structure.

Investigations of trading in the New York potato futures market uncovered the manipulative activities of a number of large speculators who were put out of the market for various periods. The CEA has also prepared a series of basic-data reports and original studies of potato futures which have stimulated efforts to improve trading practices in the New York market.

Futures trading in wool was placed under the Commodity Exchange Act in 1954. Producers and other wool industry people who want to know more about the New York wool futures market and its place in wool pricing and marketing, now have available the basic information and data about this market which has resulted from the regulatory work of the CEA.

CEA investigations of Chicago egg futures resulted in a complaint charging a group of 15 speculators with manipulating egg prices on the Chicago Mercantile Exchange and cornering the market. When an order was issued by the judicial officer of the Department to put these speculators out of the futures markets for periods ranging from 60 days to 1 year, they appealed to the United States Court of Appeals. A recent unanimous decision of the court upheld the Department's order.

In another recent case a broker was charged with cheating and defrauding customers in lard futures transactions on the Chicago Board of Trade. The broker's registration was revoked and his trading privileges on all contract markets suspended.

Other investigations by the CEA have developed evidence to support formal complaints charging price manipulation or other unlawful practices in leading futures markets for wheat, oats, soybeans, and cotton. The agency's system of required daily reporting of futures transactions by commodity brokers and large traders enables it to maintain continuous surveillance of trading operations, and to provide the public with basic data on the conditions that prevail in the futures markets.

FOREIGN AGRICULTURAL SERVICE

United States agriculture has had a big export year.

More products from American farms were used by the world's people in 1956–57 than ever before in history.

During part of the fiscal year, there were scarcely enough ships available to handle the export movement of United States farm products.

Indicating recovery from the weaker competitive position of previous years, United States agriculture in 1956–57 supplied approximately 22 percent of all world agricultural exports.

United States agricultural exports rose during the year to the new all-time high level of $4.7 billion.

Twelve cents of each marketing dollar received by United States farmers came from exports.

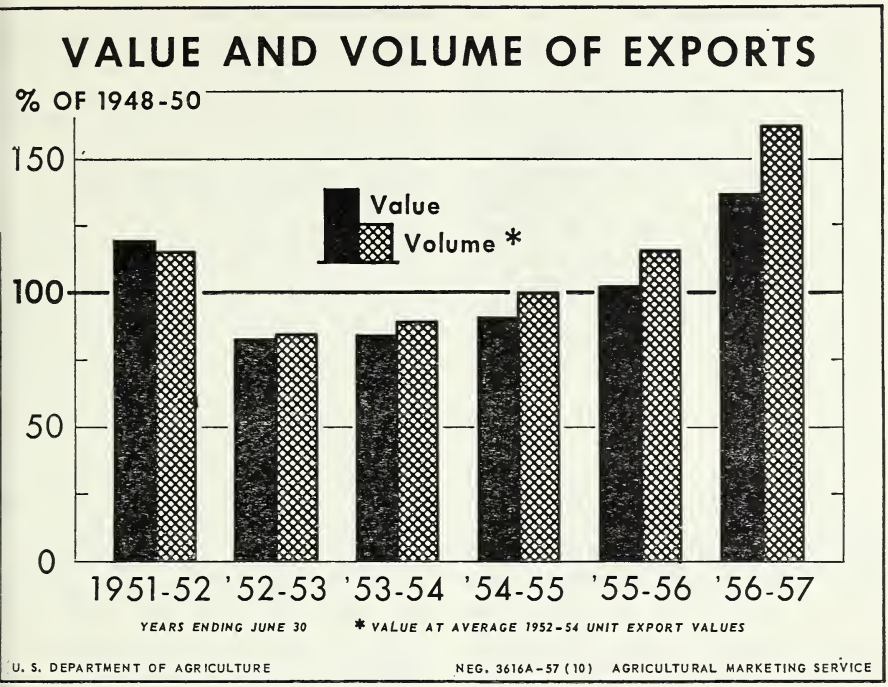
While Government programs contributed substantially to the export total, exports under commercial dollar sales were second highest in history.

Exports were the equivalent of these percentages of the year's production: Milled rice, 83 percent; cotton and linters, 59 percent; wheat and flour, 54 percent; tallow and greases, 45 percent; soybeans and oil, 35 percent; tobacco, 26 percent; lard, 22 percent.

Due largely to increased exports, the surplus of agricultural products, which had been climbing, was appreciably reduced.

This big export movement didn't "just happen." It was brought about through the combined efforts of American agriculture, industry, and Government.

The Foreign Agricultural Service, in addition to representing American agriculture abroad, made specific contributions in (*a*) foreign market development, and (*b*) foreign agricultural reporting and analysis. This activity was effectively supported by the Service's 77 agricultural attachés stationed at 51 posts and covering some 100 countries and areas.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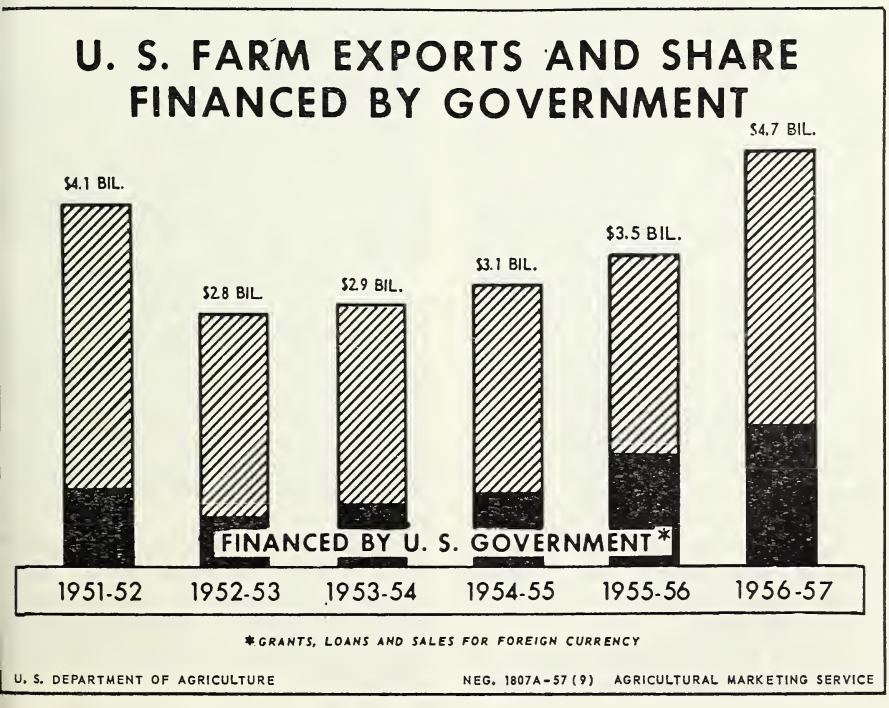
NEG. 3616A-57 (10) AGRICULTURAL MARKETING SERVICE


U. S. FARM EXPORTS AND SHARE FINANCED BY GOVERNMENT
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*GRANTS, LOANS AND SALES FOR FOREIGN CURRENCY
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1807A-57 (9) AGRICULTURAL MARKETING SERVICE

Market Development

The strengthening of foreign markets for United States farm products is being approached along a broad front. We are endeavoring to lower foreign trade barriers. Our specialists carry out foreign marketing research. Our attachés render informational and contact service. Government-financed programs are helping to expand exports. We work closely with United States agricultural and trade groups in carrying out these objectives.

The following three activities are indicative:

1. Effort was continued toward reducing foreign trade barriers and gaining freer access to foreign markets for United States farm products. The importance of this activity is indicated by the fact that nearly 80 percent of our farm products now go to countries which, through reciprocal trade agreements, have liberalized their acceptance of our farm products.

2. Foreign currencies, obtained through sales of surpluses to foreign countries, have become available for market promotion work. In 1956–57, FAS brought its market promotions to a total of 69 cooperative projects with 28 United States trade organizations in 26 countries. These projects included the export promotion of such leading United States commodities as wheat, cotton, dairy products, soybeans, poultry, fruits, tallow, lard, beans, feed, rice, and seeds. They include special studies on opportunities to sell to foreign buyers, vigorous effort to make United States farm products competitive in the world market, and the attractive displaying of United States farm products at international trade fairs.

3. FAS administered Title I of Public Law 480, the act that permits sale of United States agricultural surpluses for foreign currencies. Shipments under title I added significantly to our exports, accounting in fiscal 1957 for nearly 20 percent of the export total.

Foreign Reporting and Analysis

FAS continued to keep American agriculture and the United States public informed on foreign agricultural situations, including crop and livestock production, Government policies, competition, and trade opportunities. The United States agricultural attachés, who are the foundation of this worldwide reporting service, sent us a total of 4,777 agricultural reports and an even greater number of other communications in the form of cables, letters, and memoranda. This information was released to the American public in a continuous flow, and was an invaluable aid to those in agricultural trade.

Government programs (sales for foreign currencies, barter, and donations) accounted during the year for 40 percent of United States agricultural exports. FAS and other participating agencies, however, continued to place their main emphasis on obtaining maximum exports of American farm products through commercial channels with payment in dollars.

We believe that the shortest distance between producers and consumers is not through government programs but via the commercial marketplace. Government distribution programs can be and are effective in helping to export surpluses, but we want them to be temporary programs, not built-in permanent institutions.

Export sales for dollars increased $700 million in fiscal 1957. We hope to see further increases. Here are some typical examples of the FAS activities in support of this objective:

Many foreign countries limit the amount of United States farm products allowed to enter. FAS, representing the Department, met with a group of European countries in Geneva, Switzerland, in June 1957, under auspices of GATT (General Agreement on Tariffs and Trade). As a result of the consultation, four countries—Sweden, Italy, Austria, and Germany—agreed to be more liberal in permitting certain United States farm products to enter. Commodities to get more liberal treatment (not necessarily by all countries but on a selected basis) will include grains and flour, meats, oilseeds, cotton, and canned fruit.

Although most foreign countries have relaxed their stringent controls of World War II, nevertheless government intervention in agriculture remains widespread and intensive. FAS during the year compiled a comprehensive analysis, country by country, showing foreign government influence in internal market and price regulation, in regulation of foreign trade, and in subsidization of production and trade. This report will be an important guide for American businessmen engaged in foreign agricultural trade.

Japan is one of the principal markets for United States farm products. Japan has been importing about $1.4 billion of agricultural products annually, with nearly one-third coming from the United States. Involved are wheat, rice, barley, corn, tobacco, hides and skins, soybeans, cotton, and tallow. FAS studies clearly reveal that keen competition from other supplying countries is increasing, and that Japan's continuing ability to buy large amounts of United States farm products will depend principally on Japan's opportunity to earn dollars by selling its manufactured products in the United States.

With South Asia—India, Pakistan, Afghanistan, Ceylon, and Nepal—bent on improving agricultural output, how will this affect the United States? FAS studies indicate that the need among the area's millions of people is so vast that we can expect little export competition from the area in the foreseeable future. Also, despite agricultural improvement, the area probably will need to continue importing agricultural products.

A comparison and quality evaluation was made of foreign-grown and United States cottons. United States cotton of the same grade and staple length had a higher overall quality index than the foreign growths in 11 of 15 comparisons. This information has been widely circulated among foreign buyers, mill owners, and textile organizations, as one more step in strengthening the foreign sales appeal of United States farm products.

An export fruit catalog, "American Fruits for the World," was prepared during the year by FAS, for wide distribution abroad during the 1958 fiscal year. This is a unique publication. Not only does it illustrate the principal American fruits through fine quality color photographs but it tells about each fruit in four languages: English, French, German, and Spanish. The catalog promises to be both an effective attention-getter and a valuable source of information for the foreign importer of United States fruits.

AGRICULTURAL STABILIZATION

COMMODITY STABILIZATION SERVICE

"Purchase agreements are 'price insurance' as far as I'm concerned," says the operator of a 200-acre Iowa farm. "Purchase agreements, by providing a convenient, inexpensive form of price protection, also have helped me do an orderly job of marketing."

He explains how he uses purchase agreements. "I take out purchase agreements on my corn, oats, and barley through my local Agricultural Stabilization and Conservation Committee. For each crop, I fill out a simple form, pay a small service charge, and that's all there is to it—no trouble at all.

"If prices get above the support level during the marketing season, I sell my grain to the local elevator. However, if prices stay low, the purchase agreement gives me the option of selling my grain to the Commodity Credit Corporation at the support price—provided I have declared my intention to do so within a specified 'declaration period,' and provided the grain is of eligible quality.

"Purchase agreements, as you can see, provide me a positive type of price protection," he goes on. "That's good for *me,* certainly. Also, because I know that I can sell my crops to CCC at the support price near the end of the marketing season, I don't need to market at harvest time, when there generally is a shortage of storage space and transportation facilities. I can pick my own time—'stretch out' my selling season. That's orderly marketing—which is good for *everybody.*"

Thousands of other farmers in 1957 used purchase agreements or loans as a protection against the effects of wide price fluctuations. The volume of support extended on 1956 crops, through June 30, 1957, amounted to $2,978,899,000, as compared with $3,519,014,000 on 1955 crops.

Funds of CCC "tied up" in price support at the end of June 1957 amounted to $7,338,081,000—consisting of $1,966,829,000 in loans outstanding, and $5,371,252,000 in inventories, on the basis of cost value. Funds in loans and inventories on June 30, 1956, totaled $8,257,308,000.

Three commodities accounted for the bulk of the June 30 loan total: Upland cotton, 3.8 million bales, $602,466,000; corn, almost 492 million bushels, $710,299,000; and tobacco, over 946 million pounds, $577,508,000. Other commodities on which CCC made loans were wheat, extra long staple cotton, honey, soybeans, barley, dry edible beans, flaxseed, grain sorghums, oats, rice, rye, peanuts, tung oil, and rosin.

Among the large commodity holdings on June 30 were wheat, 824 million bushels, valued at $2,259,855,000; corn, 803 million bushels, $1,477,449,000; and upland cotton, 5 million bales, $867,065,000. Other commodities in inventory included butter, butter oil, cheese, nonfat dry milk, rice, oats, barley, grain sorghums, flaxseed, soybeans, wool, rye, peanuts, dry edible beans, seeds, extra long staple cotton, cotton linters, wheat flour, cornmeal, rosin, and gum turpentine. Also in inventory were certain strategic materials acquired through barter of surplus farm commodities.

National average support prices in effect for 1956 crops (or production during specified periods) were as follows:

Basic commodities: Wheat, $2 per bushel; corn, $1.50 per bushel; upland cotton, 29.34 cents per pound; extra long staple cotton,

56.62 cents per pound; peanuts, 11.4 cents per pound; rice, $4.57 per hundredweight; and various types of tobacco, in cents per pound, as follows: Flue-cured, 48.9; fire-cured, 36.1; burley, 48.1; Virginia sun-cured, 32.1; cigar filler and binder, 37.4; dark air-cured, 32.1; Maryland, 47.0; and Puerto Rican, 31.4.

Designated nonbasic commodities: Butterfat, 58.6 cents per pound; manufacturing milk, $3.25 per hundredweight; wool, 62.0 cents per pound; mohair, 70.0 cents per pound; extracted honey, 9.7 cents per pound; and tung nuts, $53.76 per ton.

"Permissive" commodities: Barley, $1.02 per bushel; dry edible beans, $6.31 per hundredweight; flaxseed, $3.09 per bushel; grain sorghums, $1.97 per hundredweight; oats, 65 cents per bushel; rye, $1.27 per bushel; soybeans, $2.15 per bushel; cottonseed, $46.80 per ton; and crude pine gum, $27.66 per standard barrel, net basis.

Net realized program losses sustained by the CCC in its nonrecourse loan, purchase and payment programs totaled $1,299,477,000 in the fiscal year 1957, as compared with losses of $974,767,000 in the fiscal year 1956.

During the year CCC disposed of commodities having a cost value of $4,208,000,000—a new record. Of this total, $2,326 million represented sales for dollars; $631 million, barter; $698 million, operations under Titles I and II, Public Law 480; $453 million, donations; and $100 million, transfers to other Government agencies.

A comprehensive storage facilities program was continued during the year. At the end of June 1957, CCC owned bins having an aggregate storage capacity of 990 million bushels. Commercial storage space covered by outstanding occupancy contracts totaled nearly 180 million bushels. CCC also had nearly 54 million bushels of wheat stored in ships of the Maritime Reserve fleet. Loans made and commitments outstanding for construction of farm storage facilities totaled $89 million for a capacity of 320 million bushels from inception of the program in 1949 through June 1957, the increase in capacity during fiscal 1957 totaling 31 million bushels.

The sales quota guaranteed the United States for the 1956–57 International Wheat Agreement "year" was 128,045,000 bushels of wheat or wheat-equivalent in the form of flour. Actual sales recorded against this quota through June 30, 1957, totaled 122,048,000 bushels.

Differential payments amounting to $66,873,000 were made to commercial exporters in cash or in "wheat export payment certificates." In addition, 24,876,000 bushels of wheat and wheat equivalent were shipped under the agreement from CCC's owned stocks and the amount of differential recorded for these deliveries totaled $19,494,000. Thus the aggregate agreement differential amounted to $86,366,000 on the total of 106,633,000 bushels, or a fiscal year average of 81 cents per bushel.

Under its commodity export program, CCC sold wheat for export outside of the International Wheat Agreement quotas at prices comparable to those provided in the agreement, and provided cash and in-kind payments to commercial exporters for similar sales from commercial stocks. A total of 94,181,000 bushels of wheat (including wheat equivalent of flour) was supplied by CCC during fiscal 1957. The difference between market value and sales proceeds amounted to $65,776,000. In addi-

tion, CCC issued $51,942,000 worth of in-kind "wheat export payment certificates" in accordance with the wheat sales policy announcement effective September 4, 1956, and made $15,458,000 cash subsidy payments on wheat flour shipments from sales made from commercial stocks.

CCC made equalization payments of $14,234,000 on cotton products made from American upland cotton grown and processed in the United States. In addition, CCC purchased and donated for emergency needs and for trade fairs, livestock and poultry products having a value of $11,875.

The Commodity Credit Corporation is authorized by statute to borrow money as needed for operations up to a maximum of $14,500,000,000 outstanding. As of June 30, 1957, CCC had in use $13,743,000,000 of its borrowing authority.

The Soil Bank

The 1957 crop year was the first full year of operation under the Soil Bank program. This is a major national effort to reduce the flow of surplus commodities into Government and non-Government storage and to increase on-the-farm conservation.

Nearly a million agreements were signed putting 21 million acres of allotment land into the acreage reserve. These included nearly 13 million acres of wheat, over 5 million acres of corn, and 3 million acres of cotton.

About 85,000 farmers also signed agreements to put over 6.5 million acres into the conservation reserve.

Because of the acreage reserve alone we estimate that farmers in 1957 produced about 2 million bales less of cotton than would otherwise have been the case; they produced 6 million hundredweight less of rice, 93 million pounds less tobacco, 225 million bushels less corn, and 175 million bushels less wheat.

Compensation to producers under the acreage reserve program with respect to 1956 crops, through December 31, 1957, totaled $248,096,000. Payments by crops were as follows:

Corn	$170,211,000
Wheat	43,355,000
Cotton	26,406,000
Tobacco	6,233,000
Rice	1,311,000
Peanuts	580,000
Total	248,096,000

Acreage reserve payments on 1957 crops through December 31, 1957, totaled $606,929,000. Payments by crops were as follows:

Wheat	$229,307,000
Cotton	152,038,000
Corn	192,791,000
Rice	15,018,000
Tobacco	17,775,000
Total	606,929,000

Payments to producers who had signed contracts under the conservation reserve program totaled $88,063,000 through December 31, 1957.

We have urged that the acreage reserve program be terminated with 1958 and that increased emphasis be placed on the conservation reserve program of the Soil Bank.

FEDERAL CROP INSURANCE CORPORATION

"Torrential midsummer rains have driven thousands of * * * farmers to the brink of financial disaster.

"Crop losses still being tabulated will run into millions of dollars. * * * In * * * County alone, half of the 70,000 acres of beans planted have been drowned. The

loss from this crop is expected to top $3 million. * * * Some veteran agricultural observers are comparing the heavy rains of July 1957 with the great drought of 1937 in terms of weather damage.

"Deeply concerned, county agents from the stricken areas will meet Friday * * * with State and Federal agricultural officials to consider financial relief for hard-pressed farmers. * * *"

This newspaper excerpt graphically depicts the need for the stabilizing influence of Federal All-Risk Crop Insurance and the place it should eventually assume in the farm program picture. The county mentioned had an all-risk bean insurance program but lost it before 1957 when the number of bean farmers who applied for the protection fell below the legislative requirement. The lost insurance protection would have returned more than a million dollars to these farmers just when they needed it most.

Since 1939, crop insurance has been developing a sound basis for providing protection against disaster losses for farmers. However, requests for special emergency assistance have become so commonplace following crop disaster in recent years that a clear-cut question regarding national policy seems to be emerging. The question is whether a farmer's protection against the impact of crop disaster shall be through a medium of self-help such as crop insurance provides or through appeal to the Federal Government for special emergency assistance.

The 1957 experience of the Federal Crop Insurance Corporation was very favorable, reflecting the end of the prolonged drought over an extensive area in and around the Great Plains. Generally good crop conditions prevailed in most insurance counties.

Indemnities of more than $11 million in 1957 left about $6 million of premiums after indemnities were paid. The premium reserve, however, was less than normally would have resulted. The Corporation's premium income was reduced by the Soil Bank program. Placing of acreage in the Soil Bank reduced insured acreage in counties by varying amounts, ranging to nearly 100 percent in a few instances. While this tended to lower crop insurance premiums by more than $4 million, there is no program conflict involved. Any successful effort to cut the effect of surpluses on the Nation's agriculture should lead eventually to increased use of self-help crop insurance. Corporation personnel are instructed to encourage Soil Bank participation even though such participation temporarily reduces the total insurance operation.

Wet weather was a threat to the 1957 crop insurance experience from start to finish. It delayed the planting of many crops, particularly corn, posing the threat of killing frosts before the late-planted crops matured. When this threat had largely passed, excessive moisture prevented the timely harvest of many good crops and caused rapid deterioration in the field. The unfavorable harvesting weather sharply increased the insurance losses in the corn, cotton, dry bean, and multiple programs and delayed completion of loss adjustments. Fortunately for the insurance experience many farmers had harvested all or a high percentage of their insurance coverage before this damaging weather struck.

Flax and citrus were the only insurance programs with cata-

strophic experience in 1957. Their experience, however, illustrates well the risk that hangs over growing crops each year and how crop insurance provides the means for farmers to build their own emergency assistance against crop disaster.

Just when it appeared that citrus crop insurance would have its seventh straight year of favorable experience, the series of freezes in Florida sharply reversed the picture. Since the small citrus experiment started in 1951, Florida policyholders had paid about a half million dollars of premium compared with less than $30,000 of losses. When the payment of 1957 indemnities is complete, it will have taken more than the total premium payments for the 7-year period to cover the indemnities for this one citrus crop disaster. Unfortunately only about 10 percent of the eligible citrus producers had joined in this program of self-help for protection against crop disaster.

The flax program which started in 1945 also encountered its first year with losses so widespread as to require more than the annual premium income. Disease, excessive moisture, drought, and late harvests pushed the flax loss ratio to the point where the Corporation paid about $2.50 of indemnity for each $1 of premium. Disease damage from "aster yellows" did extensive damage in flax, just as a new type of rust severely damaged durum wheat a few years ago.

Although the barley, citrus, corn, cotton, multiple, peach, soybean, tobacco, and wheat programs operated in the black and dry beans broke even, this did not mean that the nation had no areas where damage to such crops was not severe. The Corporation paid $2¼ million of wheat indemnities in Kansas, a loss ratio of 2.55, although Kansas wheat premium was sharply reduced by Soil Bank participation.

Multiple operations went in the red in 12 States: Illinois, Indiana, Kansas, Louisiana, Maryland, Michigan, Minnesota, Ohio, Oregon, Pennsylvania, Tennessee, and Wisconsin. This was true also for corn operations in Indiana, Maryland, Ohio, Pennsylvania, and Wisconsin, and for soybean operations in Illinois and Ohio. Florida was the only State requiring more than its premiums to pay tobacco losses. Bean operations in Michigan and Idaho required more than their premiums to pay losses, and late harvesting losses put Louisiana and Mississippi slightly in the red on cotton.

Nebraska, where drought and heat resulted in corn indemnities in 1956 of more than $5 million—a loss ratio of 6.15—completely reversed this experience in 1957 when only 5 percent of its corn premiums were required to pay losses. Iowa had a 1957 loss ratio of 0.35 for multiple crops, compared with 1956 when its farmers collected over one-third of the more than $4 million paid to multiple crop policyholders. The Iowa loss ratio for corn in 1957 was 0.28 as against 1.80 in 1956.

Such contrasting loss ratios illustrate how premiums collected in years of good crop experience can be accumulated to cover losses when crop disaster is unusually severe and widespread.

AGRICULTURAL CREDIT

RURAL ELECTRIFICATION ADMINISTRATION

Chicken Farming, 1957 Style

For 12 years a farm couple in Iowa raised chickens in the "good old way," about 300 a year. This year they decided they would have to get up-to-date or get out of the chicken business.

And up-to-date it is. Their new windowless 30- by 56-foot aluminum building is a year-round home for 1,008 caged layers whose board bills are marked "paid" as long as they maintain 70-percent production. Electricity replaces the sun in 17 fluorescent strips that provide 14 hours of lighting. Electricity also powers the automatic water supply and ventilating system. Other electric motors move in the feed from an outside storage tank and clean the house. An electrically powered and controlled cooler in the new building safeguards egg quality at a prescribed 55° temperature and 75-percent humidity.

Mr. and Mrs. G. report to their power supplier that this new electrical efficiency enables them to feed their 1,008 hens and gather eggs in about 20 minutes each day. This is just half the time spent on 250 hens in the old building. Farmer G. also feeds 100 to 200 head of cattle and 250 hogs on his 230-acre farm.

Electric Program

Rural power distributors that borrow from the Rural Electrification Administration continued to expand their distribution and power supply facilities during the 1957 fiscal year. They added 22,352 miles of line and 81,078 kilowatts of generating capacity. This increased their mileage to 1,394,353 and the capacity of generating plants to 987,778 kilowatts.

Some 105,000 consumers were added to the systems, increasing the number to 4,406,503. Active REA electrification borrowers included 927 electric cooperatives, 42 power districts, 15 other public bodies, and 4 electric companies.

REA made 404 loans totaling $300,461,514 in 40 States and Alaska. Of this amount, 58 percent was to finance the construction of electric distribution facilities, 40 percent was for generation and transmission facilities, and 2 percent was for consumer facilities. New generating capacity of about 379,000 kilowatts is provided in the loans. A single generating unit of 100,000-kilowatt capacity was among the facilities approved.

The new loans will enable the systems to provide service to 132,569 additional consumers and to improve the service of thousands of others already on the lines.

In fiscal 1957, REA received 429 applications for loans totaling $382,878,000. Applications totaling $154,649,000 were carried over into the new fiscal year.

Total energy sales by the systems, exclusive of sales between borrowers, were approximately 19,039,000,000 kilowatt-hours, an increase of 11.5 percent over the 1956 sales of 17,077,000,000 kilowatt-hours. The average cost of wholesale power purchased by borrowers declined again, to an all-time low of 7.1 mills per kilowatt-hour. The average cost of power to all consumers dropped to 2.24 cents per kilowatt-hour from 2.31 cents a year earlier.

Farm usage averaged 277 kilowatt-hours in June 1957. This is more than three times the average monthly farm consumption in the

first postwar year (1946). Farm usage has increased an average of 10.5 percent per year during the past 8 years.

Total revenues of the borrowers were a record $513 million, up more than $35 million over the preceding year. Borrowers paid $39,342,578 in interest and $84,291,426 on principal. At the close of the year, 756 borrowers had a balance of $108,902,271 in payments ahead of schedule to REA, an increase of $13 million during the year. Four electric distribution borrowers completed payments on their loans.

Principal and interest overdue more than 30 days totaled $200,602, the lowest on this date since 1943.

REA initiated several activities and continued others that offer promise of economies or improvements in rural electric service and borrower management. Among these are techniques of long-range planning and other means of planning for business security.

REA and its electric borrowers are continuing to follow the development of nuclear reactor technology so that nuclear powerplants will be utilized for service to farms and other rural consumers when electricity is produced economically. Toward this goal, REA made a second loan for the conventional portion of a nuclear powerplant. Three borrowers are continuing negotiations with the Atomic Energy Commission for operating nuclear reactors that would be constructed by AEC.

Telephone Program

Telephone borrowers completed construction of 35,000 miles of line, largest annual construction achievement in the 7½-year-old rural telephone program, bringing total new construction to 103,000 miles of line. The 461 reporting borrowers connected 132,650 telephones during the year and now have 567,000 telephones in service.

REA made 221 telephone loans totaling $81,729,000. They call for the furnishing of telephone service to 175,000 subscribers, including approximately 63,000 who will get service for the first time. There were 94 new borrowers during the year, increasing the total to 551. Of these, 347 are independent companies and 204 are cooperatives. Total loans in this program stand at $391,139,542. They will enable the borrowers to bring new or improved service to 863,329 subscribers from 241,681 miles of lines and related central office equipment.

REA had 164 applications totaling $63,048,000 on hand at the year's end.

The rural telephone borrowers repaid $2,028,562 of principal and paid $1,553,131 in interest on their loans. At the close of the year 28 borrowers had a balance with REA of $409,946 in payments ahead of schedule. Twenty-three borrowers were overdue more than 30 days on payments amounting to $504,887.

Telephone facilities financed by REA are being utilized in two air defense and safety programs. Several of the systems, in conjunction with the telephone industry, are providing telephone circuits for the operation of the Air Force's SAGE project, the radar network for detecting hostile aircraft. Through loan funds and technical advice REA is assisting borrowers that have been asked to provide telephone facilities needed by the Civil Aeronautics Administration in a new air-ground radio communications network.

REA continued to explore means of reducing costs and improving reliability of materials used in telephone construction. Research and field tests conducted by REA in

cooperation with wire and cable manufacturers have developed methods that will permit use of plastic wire and cable underground. Other REA-sponsored tests at the National Bureau of Standards contributed to improved design of materials for plant construction.

REA developed design requirements and then interested manufacturers in developing completely transistorized subscriber carrier equipment. A field trial of the equipment is under way. This equipment may result in more reliable carrier telephone service, lower operating costs, and longer service life.

Dial-mobile radio equipment, developed under contract for REA, was installed for a trial basis during the past year on two borrowers' systems. The equipment was operating successfully at the end of the year. It may prove useful and economical for isolated farms where wire lines cannot be used and in various rural situations where mobile service is required.

After study and careful consideration, REA revised the loan security requirements for rural telephone loans in April 1957 to strengthen the Government's security for telephone loans and to give impetus to efforts to bring modern telephone service to rural areas. The agency also revised loan feasibility standards for the rural telephone program.

FARMERS HOME ADMINISTRATION

The long drought was broken in the late spring of 1957 in most areas in the southern Great Plains. But for an ex-marine who farms near Dodge City, Kans., the drought ended a year earlier when the water first poured through his new irrigation system.

While many of his neighbors were marking time until the rains came, he had bumper crops. With one application of water in the spring of 1956 he more than doubled his former dryland wheat yield, and with four applications trebled his production of milo and Atlas Sorgo. Despite some hail and wind damage, his 1957 wheat crop averaged 29 bushels to the acre. There was practically no yield from what little dryland wheat was planted in his vicinity.

Funds to finance this irrigation system were provided by the First National Bank of Dodge City and insured by the Farmers Home Administration. The local Farmers Home supervisor, drawing upon the experience the agency has gained in financing more than 600 such irrigation systems in western Kansas, helped analyze the cost and determine the long time and annual plan of operation. Soil Conservation Service provided technical assistance in laying out of terraces, determining the water intake rate, and the general feasibility of the project.

The system when completed included a 175-foot well, an engine powered by natural gas, turbine pump, 2,600 feet of underground 8-inch main line, and 3,800 feet of 4-inch lateral complete with sprinklers.

It took approximately $18,000 to develop the irrigation system. But the income from the increased yield of wheat plus the increased silage and grain that will be marketed each year through 100 winter-fed calves will more than repay the cost of the equipment during the 15-year term of the note. If all goes well there will be additional income available for family living expenses, for investment, and for reserve. Perhaps most important is the certainty that, no matter what the weather, there will be plenty of moisture for the crops.

Throughout the United States in 1957 farmers borrowed $356,300,000 from the Farmers Home Administration. This compares with $308,492,000 borrowed in fiscal 1956. Approximately 51 percent of the funds were used to pay operating costs, 30 percent to finance the purchase and improvement of farm real estate, and 19 percent to defray emergency expenses.

FHA extended this credit to farm families who needed loan funds to obtain the resources essential for successful farming, but who could not obtain the necessary funds from local sources.

The number of loans closed during the year totaled 123,800. Most of the loans were used to develop and strengthen family-type farms. All loans were accompanied, to the extent necessary, by technical assistance in planning and carrying out sound farming operations.

Repayments during fiscal 1957 of principal and interest on loans outstanding amounted to $294,623,000 compared with $282,333,000 in fiscal 1956. As of June 30, 1957, outstanding loans totaled $1,013,180,000, compared to $943,283,000 on June 30, 1956.

Approximately 222,000 farmers, including those still using credit received in previous years, used the credit service during 1957.

More than 44,000 borrowers repaid their loans in full during the year and reached a position where they could obtain whatever credit they need from other sources.

FHA made operating loans totaling $183,300,000 to 84,300 farmers. The funds were invested in machinery and livestock needed to make maximum use of land and labor resources, to pay for insecticides, fertilizer, fuel, and other farm and home operating expenses, and to refinance chattel debts.

Farm ownership loans to buy, enlarge or develop farms, or to refinance existing debts were made to 6,150 farmers. The total was $76,100,000 of which $29,772,000 was provided through the insured loan program.

Soil and water conservation loans were advanced to 1,600 farmers for a total of $9,400,000, of which $3,926,000 was insured. These loans were used mainly to develop irrigation and farmstead water systems and to carry out soil conservation practices.

Loans totaling $21,300,000 for the construction and repair of farm houses and other essential farm buildings were made to 3,350 farmers.

Emergency loans helped 28,400 farmers continue farming despite drought, floods, and other emergency conditions. These loans amounting to $66,200,000 included $10,862,000 advanced under the special livestock loan program.

In connection with the Rural Development Program, FHA was authorized to make operating loans to farmers who have part-time off-farm employment, and development loans to farmers who own less than family-type farms. The agency was also authorized to make real estate loans primarily for refinancing debts.

Approximately $4,533,000 was loaned for operating expenses to 3,045 farmers with part-time off-farm employment and $3,072,000 was advanced for farm development to 382 farmers with less than family-type farms. Real estate loans totaling $18,379,000 were advanced to 1,562 farmers primarily for refinancing debts.

Farmers obtained loans through approximately 1,500 county offices located in agricultural areas throughout the United States,

Alaska, Hawaii, Puerto Rico, and the Virgin Islands. A county committee composed of three local persons, at least two of them farmers, determined the eligibility of applicants and assisted the agency's supervisors in adapting national policies to local conditions.

RURAL DEVELOPMENT PROGRAM

Substantial progress has been made in the cooperative Federal-State Rural Development Program. With the addition of 6 States and Puerto Rico in 1957, a total of 30 States [2] are now taking part in the program. Rural development committees representing farm and nonfarm agencies have been formed in these States. Nearly 100 rural counties are pioneering this new approach to balanced farm, industry, and community development.

The program is having a growing impact. Plans for specific development projects have been revived and given new life. Chambers of commerce and industrial development groups have strengthened their membership and entered into closer ties with the agricultural community. Economic resources of considerable potential have been uncovered by surveys going forward in a majority of program counties.

More than 350 new development projects in agriculture, forestry, marketing, industry promotion, health and vocational training are reported.

For those rural people who have the desire and ability to develop an efficient farm unit, there are special adult education projects and technical assistance. Vocational training, labor surveys, and industrial development are emphasized for those who choose nonfarm employment. In many demonstration counties, projects have been started leading to improved education, better health and sanitation, and community development.

These major actions were taken in 1957, strengthening the Rural Development Program and broadening its scope:

Former Purdue Dean of Agriculture Harry J. Reed became national coordinator.

The Department of Agriculture allocated funds to the States to staff the program. Workers have been assigned in development counties to increase on-the-farm education; help local counties in their organization and planning; increase water and forest protection; conduct resource surveys; and in some cases, administer credit programs.

A series of regional conferences was held during 1957 at Lexington, Ky.; Shreveport, La.; Fort Smith, Ark.; Athens, Ga.; and Asheville, N. C. Most States that have inaugurated development programs were represented at these meetings, which brought together farm, business, and civic leaders and county, State, and Federal agency workers for workshop sessions covering all phases of rural area development.

Last year the Small Business Administration was added to the interdepartmental groups coordinating the program at the national level. These now include representatives

[2] States participating in the Rural Development Program: Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Washington, West Virginia, Wisconsin.

of the Departments of the Interior; Agriculture; Commerce; Labor; Health, Education, and Welfare; Council of Economic Advisers; and the Small Business Administration.

The U. S. Department of Agriculture committee is composed of the Agricultural Research Service, Farmers' Home Administration, Agricultural Marketing Service, Rural Electrification Administration, Soil Conservation Service, Federal Extension Service, Forest Service, Agricultural Conservation Program Service, Commodity Stabilization Service, and Farmer Cooperative Service.

Summing up the value and importance of the Rural Development Program, the South Carolina Rural Development Committee has commented:

"One of the most valuable elements has been found to be the strength that comes from the combined efforts of farmers, business, and civic leaders, and representatives of agencies and organizations working together as a team on county rural development committees. These committees, built around local agricultural, business, and civic leaders, are proving to be an effective force in getting programs and activities under way aimed at improving the lot of low-income farm familes. (The program) has also been helpful in getting the low-income families to become interested in helping themselves."

What's Being Accomplished

The following are typical of the projects that are going forward as a result of the initiative or support of rural leadership in the pilot counties:

A boat manufacturer has started a small factory in Perry County, Ind. Result: Jobs for 50 rural people.

Vocational training in such skills as welding, electrical wiring, plumbing for 500 people in isolated Kentucky rural counties.

Employment for 130 people in a new poultry processing plant in a Texas trade area.

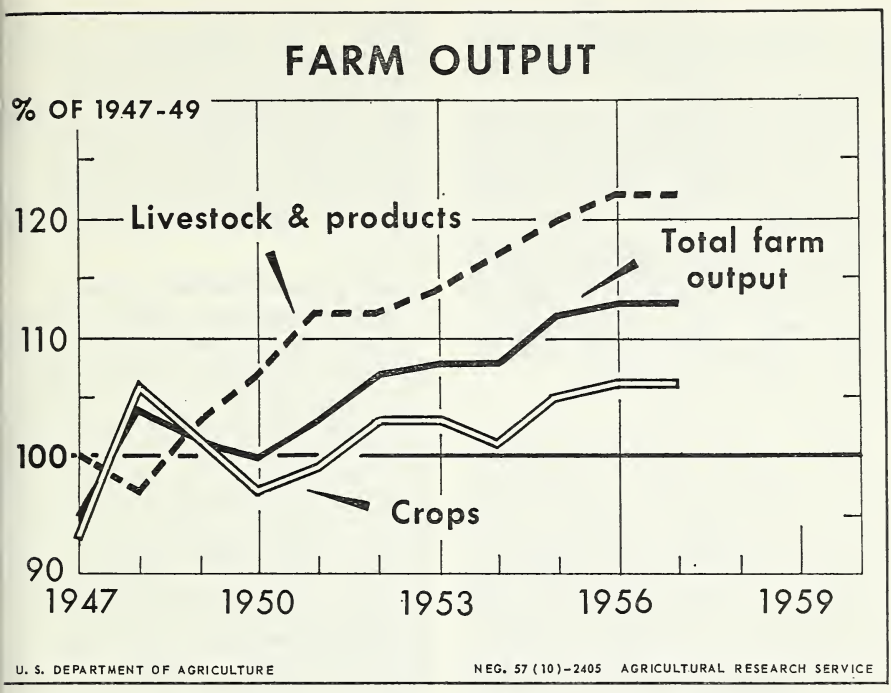
Increased poultry production on farms in Chesterfield County, S. C., bringing 58 new job opportunities to the county.

Interviews of more than 1,000 farm families in Arkansas' three pilot counties to obtain accurate information on the need for off-farm employment.

A 2-day exhibit of handicrafts produced on small farms in Missouri's Taney County, which brought visitors from seven surrounding States and sales to several major buyers.

Production and marketing of peppers, the first commercial crop in an isolated Tennessee community, which grossed $40,000 for farmers the first year.

Reforestation in a Mississippi county, principally through the work of young people who helped set 200,000 pine seedlings.



THE 1957 RECORD AND OUTLOOK

The year 1957 was characterized by high production, strong domestic demand and record exports. Prices received by farmers increased, averaging 3 percent above 1956, and prices paid by farmers rose slightly more. The parity ratio—the index of prices received by farmers divided by the index of prices paid, including interest, taxes, and wage rates—averaged 82 in 1957, the same as in 1956.

Output of both crops and livestock products in 1957 held at or close to the record 1956 level. Heavy exports of wheat, cotton, and rice reduced carryovers of these commodities during the 1956–57 year and further decreases were in prospect in 1957–58. Stocks of feed grains, however, continued to rise and the record feed production of 1957 exceeded probable use during 1957–58.

The increase in farmers' prices from 1956 to 1957 was accompanied by a reduction in farm marketings so that cash receipts declined slightly. However, increased Government payments to farmers, mostly under the Soil Bank, raised the gross income of farmers a little above 1956. This gain was more than offset by a further rise in production expenses, and the net income realized by farm operators in 1957 totaled $11.5 billion, compared with $12.1 billion in 1956. Much of the decline in farm marketings in 1957 was due to wet weather in the fall which delayed harvests of feed grains and cotton. Stocks of crops on farms on January 1, 1958, were substantially

above a year earlier. This means that income which normally would have been realized in 1957 was postponed to 1958.

When the increase in inventories is added to realized net income for 1957, the total net income of farmers was $12.1 billion, half a billion above 1956.

The income per person of farm people from all sources in 1957 set a new record of $993, or 10 percent above 1956. Most of the increase in per capita farm income reflected a drop in farm population.

Supply

Farm output in 1957 equaled the record high of 1956. If weather and yields continue favorable, output in 1958 could well equal or exceed 1957 production. Despite a reduction of 3 percent in crop planting in 1957, primarily due to the Soil Bank program, crop production was about the same as in 1956. With hog, broiler, and dairy output expanding, production and marketings of livestock and livestock products may edge up in 1958.

Demand

Domestic demand has been strong and rising throughout most of the period since 1951. The number of consumers has steadily increased. During 1957, business activity, employment, and consumer incomes were high. Consumers continued to spend over one-fourth of their disposable income for food.

The demand for agricultural exports has been much less steady. It reached a high point in 1951–52, after the Korean outbreak. In the following fiscal year, the value of our agricultural exports dropped about one-third. It then increased gradually in 1953, 1954, and 1955 with the help of Government programs. During 1956–57, due partly to stronger demand and partly to Government assistance, agricultural exports reached a record $4.7 billion. The quantity of exports also reached a new postwar high.

We expect domestic demand for food to be maintained at a high level in 1958. During the 1957–58 fiscal year exports are not likely to equal the record level of 1956–57, but will probably exceed those of 1955–56.

Livestock and Livestock Products

Record harvests and declining prices of feed are strong stimuli to livestock production. Hog production already has started upward. The 1957 fall pig crop was 2 percent larger than the 1956 fall crop. The 1958 spring pig crop was up about 6 percent from 1957, according to the latest indications. Prices of hogs will likely hold up well through mid-summer of 1958, but prices in the fall of 1958 may be appreciably lower than they were in the fall of 1957. However, no severe price reduction is expected.

Cattle numbers on farms probably will hold steady or decrease a little for another year or two. Cattle slaughter is not expected to increase until a year or two after inventories rise. If consumers' incomes and demand for beef remain high, gradually rising prices for cattle can be expected during most of this period.

Total milk output in 1958 will set a new record high, probably around one billion pounds above the record 126.4 billion produced in 1957.

Egg producers are likely to find 1958 a more profitable year than 1957. Particularly early in the year egg prices will be higher, feed costs lower, and volume of egg sales only slightly under the near record volume of 1957. Prospects for producers of poultry meat are not as favorable. Broiler production for 1958 will probably rise above the 1957 record of about 1.4 billion

birds. Prices received by broiler growers during the year are likely to average close to the 19 cents per pound which is estimated for 1957.

Farmers' January intentions were to raise 1 percent more turkeys in 1958 than the record 80.6 million birds raised in 1957.

Wheat

Exports of wheat in the 1956–57 crop marketing year reached an all-time record high of 549 million bushels. As a result, the carryover dropped 124 million bushels to 909 million on July 1, 1957. A further reduction of about 40 million bushels may occur by July 1, 1958, on the basis of expected exports of about 400 million bushels, and a 1957 crop that was smaller than a year earlier.

Wheat yields per harvested acre averaged 21.7 bushels in 1957, an all-time high. The 1958 winter wheat crop was indicated as of December 1, 1957, at 906 million bushels, 28 percent above the 1957 winter wheat crop and 5 percent above average. Allowing for spring wheat production, a large crop is in prospect, so that any further reduction in the carryover July 1, 1959, is not likely.

Feed

Feed supplies for 1957–58 were again record high. Total feed concentrate supplies, which reached 200 million tons for the first time in 1956, increased another 9 percent in 1957. The big supply, estimated in January 1958 at 218 million tons, was the result of a favorable growing season and record stocks of 49 million tons carryover from previous years. The 1957 growing season was favorable for both feed grains and forage crops.

The supplies of feed grains and hay available are a record, both in total tonnage and in relation to the number of livestock to be fed. Supplies are also much better distributed by areas than in any of the past 4 or 5 years. Domestic consumption is expected to be a little heavier in 1957–58 than last year and exports of feed grains are likely to continue near the high rate of the last 2 years. Even with this heavier disappearance a further increase of around 10 to 12 million tons in carryover stocks by October 1, 1958, is in prospect.

Not only are feed concentrate supplies ample but the big carryover in prospect for 1958 practically assures adequate supplies for 1958–59 as well. This would be true even if the 1958 growing season should be the poorest in 50 years. Corn production in 1957 was the third highest on record. Per acre yields were a little higher than the record established in 1956. Sorghum grain production of 562 million bushels, far exceeding previous record production, also contributes to the record feed supplies.

Cotton

The supply of cotton in the United States in the current season is considerably smaller than the record high of 27.6 million bales of 1956–57. Starting carryover was about 3.2 million bales smaller than the record high of 14.5 million on August 1, 1956, and the 1957 crop, estimated at 10.9 million running bales as of December 1, is 2.3 million below the 1956 crop. Although disappearance during the current season will decline from the 16.2 million bales of 1956–57, supplies are down much more. Thus the carryover on August 1, 1958, will be about 2½ million bales smaller than a year earlier.

Tobacco

More cigarettes were manufactured in 1957 than in 1956, but the amount of tobacco used did not increase. Manufacturers are getting more cigarettes per pound of leaf than formerly. The situation is

similar for cigars. Exports of tobacco in 1957 were only a little below the high level of 1956.

Fats and Oils

With the exception of cottonseed oil, larger supplies of all major food fats are available in 1957–58 than in 1956–57. Domestic and export demand continues strong. Output of soybean oil may reach a new high and will nearly offset a decline in cottonseed oil production. Lard output will be a little larger.

Food Consumption

Total domestic utilization of food in 1957 was near record, almost half again larger than in 1935–39.

Civilian consumption of food per person in 1957 was slightly (1 percent) lower than in 1956, but exceeded the rate of the immediate pre-World War II period by 12 percent, and that of the immediate postwar period by 2 percent.

Agricultural Employment

The total number of persons working on farms in 1957 averaged about 7,649,000, compared with 7,869,000 in 1956, and the average of 8,361,000 for 1952–56. About 1 person out of 4 so employed was a hired worker, the others being farm operators and unpaid members of farm families. The average hourly wage for farm labor without room and board was 88 cents in 1957, compared with 86 cents a year earlier.

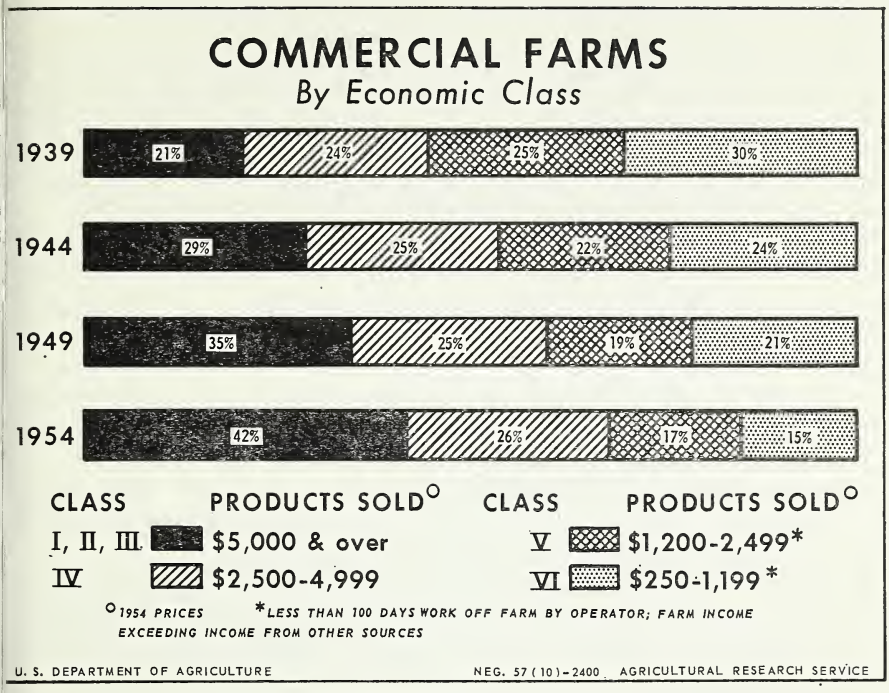
Farm Income

Farmers' realized net income in 1957 was $11.5 billion, down a half billion dollars or 4 percent from 1956. This reduction in realized net income resulted primarily from a wet fall and delayed harvest which brought a sharp reduction in marketings during the second half of 1957, particularly of feed grains and cotton, and a very substantial buildup in stocks on farms January 1, 1958. In other words, some income which would normally have been realized in 1957 was postponed to 1958. If the increase in inventories is added to realized net income for 1957, total net income including the inventory change was $12.1 billion, up a half billion dollars or 4 percent from the 1956 net income adjusted for inventory change.

Realized gross farm income was up only very slightly in 1957. This total includes cash receipts from farm marketings, Government payments, the value of farm products consumed directly in farm households, and the rental value of farm dwellings. Total marketings in 1957 were down more than enough to offset a 3-percent increase in average prices, and total cash receipts from farm marketings declined about $350 million (1 percent) to approximately $30 billion. However, Government payments were about $450 million higher, largely because of increases under the Soil Bank program. Realized nonmoney income was down only slightly.

With realized gross income showing little change, the decline in realized net income resulted from a 3 percent increase in total production expenses to a new high of $22.9 billion. Although this increase was mostly in the overhead items of interest, tax payments, and depreciation charges, expenditures for hired labor also rose along with some of the miscellaneous operating expenses.

In contrast to the dropoff in realized net income, the net income including the inventory change rose sharply from $11.6 billion in 1956 to $12.1 billion in 1957. This series is used in determining the per capita income of farm people, and is comparable with the way the in-



come of nonfarm people is computed. On a per capita basis, income of the farm population from all sources was at a record high of $993 in 1957, up 10 percent from 1956 and 2 percent above the previous peak reached in 1951. Most of the change from 1956 to 1957 reflected the 8 percent drop in the farm population for 1957.

THE OBJECTIVE FOR AGRICULTURE

The issues we are now facing are perhaps the most important of our lifetime—maybe, in many ways, the most important in the history of the United States.

Our real problem is not our strength today. Our real problem is to do now what will give us adequate strength in the years ahead.

And the very basis of our lasting strength is rooted in the spiritual ideals and moral principles of our people, as well as in the productivity, the efficiency, the adaptability of the American economy to meet whatever challenge may arise.

We need abundance. We must have high production, priced to meet the full potential of all domestic and foreign markets. Agricultural abundance is the cornerstone of our economy. Farmers deserve ample assurance that they will not be penalized for answering the call to abundant production.

But farmers and the entire citizenry need assurance that our farm programs will allow abundance to be put to good use.

In these days of cold war we cannot afford to waste land, manpower, machinery, gasoline, tires, and electricity in producing foods and fiber for storage far in excess of sensible reserves. The United States is rich in resources, both human and material; but no people—no country—faced with our current challenge is rich enough to afford waste indefinitely.

The effects spread to other segments of the economy. For example, our surpluses forced us to build bins far beyond normal needs—a waste of labor, an uneconomic use of steel and other materials. It is sheer economic waste to produce through Government incentive products that are not needed.

In the past 5 years we have done much to remove the straitjacket of unsound price supports and rid agriculture of the excess burden placed upon it by price-depressing surpluses.

But some aspects of the problem are still with us. We need to move forward again. We dare not rest content with reducing Surplus Number One—or Surplus Number Two may quickly overwhelm us.

If this occurs, we shall almost certainly lose all the progress that has been made these past few years toward a solution of the farm problem.

That would be a calamity for the country—but it would be a catastrophe for farmers.

There are three basic needs to be met:

- Expansion of the Rural Development Program to aid farmers whose acreages are so small or land so poor that they get little or no benefit from price support and have inadequate incomes.
- Expansion of markets through extension of the surplus disposal program and increased research in new uses of farm products.
- Revision of the acreage control and price support programs to permit more freedom for farmers to plant and to widen markets.

The adoption of these measures will do much to correct the shortcomings of our past and present programs. They are logical next steps forward. They will help farm people make the necessary adjustment to the world of rapid change in which we live.

Never has there been more need for earnest, frank discussion of farm policy than right now. There is safety only in a well-informed public. Will farming remain free or is it going to be socialized—nationalized? Will our farms be farmer-run, or will they be Government-run? Will we channel abundance into use, or will we cut back to an ever more stringent economy of controlled scarcity?

The challenge belongs to all of us. No citizen can disown responsibility for public policy in this critical age.

If we are to remain a free people, we must maintain a prosperous, expanding, and free agriculture. With God's help we shall succeed.

U. S. GOVERNMENT PRINTING OFFICE: 1958